Gleanings in Bee Culture

Established 1873

CONTENTS

July, 1942

Honey Markets	388 - 389
The Mystery of Nectar—Dr. J. H. Merrill	393 - 394
Variations in European Foulbrood —Dr. A. P. Sturtevant	395
Marketing Honey Cooperatively in the Empire State —William L. Coggshall	396 - 399
Fire Blight—William Smukler	400 - 401
Honey Bread—Brother Pancratius, C. SS. R.	402 - 404
Flash or Government Plan of Filtering Honey —Lloyd C. Gardner	405
No Need for Coaxing—Mrs. Benj. Nielsen	406 - 407
Apiary Hygiene—John DeBurgh Leake	408
Significance of Immunity to Bee Venom —Percy H. Wright	409
Bears Shun Bees!—L. H. Sweetser	409 - 410
Worthwhile Idea on Producing More Wax —Ray Galbraith	410
Some Things I Have Noticed—B. P. Sieber	410 - 411
Use of Bee Venom in the Treatment of Arthritis —Dr. George W. Ainlay	411 - 412
Bees Live in Attic——O. O. Chilton	412
Hiving Swarms—Geo. H. Foote	412
Second Glances—C. M. Issacson	412 - 413
It is a Wonder That He is Alive to Tell of it —Chas. M. McCash	413
L. L. Langstroth—E. R. Root	414
American Honey Institute News Notes	415
Editorials	416 - 418
Spinster Jane Says—	419
Symposium on Swarming	420 - 423
From North, East, West and South	424 - 428
The General Maximum Price Order—J. E. Eckert	429
Asked and Answered	430 - 431
Just News	432
Honey An Important Industry In Manitoba	433
Talks to Beekeepers—M. J. Deyell	434 - 435

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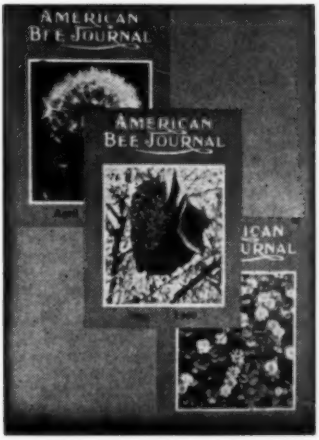

The Monthly Honey Market

U. S. GOVERNMENT REPORT
Information From Producing Areas
(Last Half of May)

Indiana. Honey plants are in the best shape in several years as a result of the cool, cloudy, rainy weather. This has kept bees in the hives, however, and stores are being rapidly consumed. Many commercial beekeepers are feeding to keep colonies alive, but some colonies are already starving. Clover is fairly plentiful, and most clovers look well. The bloom should be reasonably heavy, except that in some areas white Dutch clover is reported not thrifty. Yellow sweetclover and alsike are reported just coming into bloom, and all clovers should soon be in full bloom. Wild raspberries are also beginning to yield. Many colonies are near peak strength, but swarming has so far been light. Prospects for a good flow are encouraging. Recent inquiries for honey have been heavy, and in some markets honey is practically unobtainable. Few sales of White Clover in small pails reported at 15c per lb.

Illinois. Rainfall has been substantial and cool, cloudy weather has also contributed to keeping bees in the hives. Swarming has started in many yards. Feeding is still in progress, but in the southern part of the State white clover and alsike are in bloom, and the main flow in the northern part of the State will be on soon. In spite of higher prices demand for honey in small containers continues very active, but wholesale inquiry for the small remaining lots of honey is light. Few sales large lots White extracted reported at 12c per lb. Yellow beeswax, 40c per lb. cash, 43c per lb. in trade.

Kentucky. The entire period has been cool and rainy. Bees have been unable to gather the available pollen and nectar, and feeding is being done. Clovers are in better condition than usual and prospects are encouraging. Demand for queens and package bees has exceeded the supply. Demand for supplies has also been heavy. Beeswax has generally brought 40-42c per lb., occasionally 43c per lb.

New York. Colonies are generally strong, —stronger than a year ago, and some have two frames full of brood. Swarming reported in portions of the State. Rain and cool weather have put a stop to dandelion flow, and cut short the flow from apples, so that some beekeepers are finding it necessary to feed. When mustard is available bees are working on this source. Given favorable conditions during the main flow beekeepers are hopeful of having a better crop of honey than last year as clover and sweetclover are in excellent condition. The season is 10 days or more early. Retail demand reported good, but demand from large buyers still only fair. Prices are somewhat lower. Ton lot sales White Clover reported at 12-13c per lb., few case lots 10c cans returned, 60s 14c, small pails 15c; Buckwheat, ton lots, kegs and 60s 10½c per lb.

New Jersey. Recent rains have broken the drouth which existed during early April and May, and which was harmful to honey plants in northern New Jersey. Colonies have been brought into fine condition on tulip trees, locust and other early bloom. Strong colonies are storing a little surplus and clover prospects are promising. Some swarming has already occurred.

Pennsylvania. The first part of the period was cold and dry, but toward the close soaking rains were reported, which improved the condition of clover plants. The spring honey flow was good in some sections of the State; in others feeding is still necessary. In some areas late freezes injured clovers and froze new locust growth so that they will not blossom. Bees built up slowly early in this period. Few sales reported Light Clover 60s or more 8-9c per lb.

Maryland. The tulip tree honey flow is over, with a crop below normal because of so much cloudy, cool weather during the blooming period. Recent rains have helped the clover, which is now starting to bloom though not as plentiful as beekeepers would like. Bees are also working on blackberries and other nectar sources. Swarming reported heavy in some areas, light in others. Retail demand for honey continues excellent. Occasional sales reported of 1-lb. glass jars at wholesale, 24½c per lb.

SUMMARY

Prospects for the 1942 honey crop are now more uncertain than they were a few weeks ago, when a bumper crop seemed more hopeful than it does now. Toward the close of the period there was a marked reaction to warmer conditions, but this followed a long period of abnormally cool, rainy weather when bees were confined to their hives over wide areas of the country. Consequently they were not able to take full advantage of the early flow from fruit bloom, dandelions and other early sources. Feeding has been necessary in a large number of apiaries and spring losses have often been reported where feeding was not carried on. This condition was aggravated by the fact that colonies have generally built up to good strength. One result of the large bee population in the hives and the long confinement has been excessive swarming in many yards. However, crop prospects are still encouraging as white clover, sweet clover, and other main honey plants are generally in good condition following abundant precipitation, and if weather permits bees to fly while the nectar-bearing plants are in bloom, a good crop is still possible. The difficulty of securing competent help also adds to the uncertainty of the outlook. Colony increase has been substantial and in numerous States it probably amounted to 10 per cent in commercial yards. The increase may be greater than this in many States as a large number of newcomers to the beekeeping field have installed one or two packages of bees with the thought that thereby they could secure sufficient honey this season to supplement their lack of sugar. Some farmers are bringing in a few hives of bees so that the honey can be used in this season's canning and jelly making. Most supply manufacturers are nearly sold out of hive bodies, extractors, bee smokers veils, etc., thus handicapping the activities of new beekeepers. Frequent complaints have been received from the North this year regarding package bees, not only because of late receipt but also because of poor condition upon arrival. It now appears definite that the orange honey crop in California will be light, and the crop

of Sage honey may also be short. Colonies of bees in the southern States have already stored a fair amount of honey, and often an above-normal crop; but in the North the big question mark is the weather condition while the main nectar flow is on.

Stocks of honey are now everywhere light. Though many beekeepers have retained sufficient honey to take care of their regular customers, others are turning down frequent orders from consumers and nearby stores. Demand for honey in wholesale lots is generally light. Many beekeepers, packers and distributors of honey are awaiting further understanding of the effect of the General Maximum Price Regulation on honey prices at various levels before selling or buying much new crop honey. In the meantime, few sales of new crop California honey have yet been made. Amendments to Allocation Order M-118 have not yet been issued by the War Production Board, but many individual exemptions to that order have been granted and it is understood that the market situation has been somewhat relieved by the absorption of a portion of the heavy imported stocks which were a depressing factor to the market. Market levels have sagged slightly during the past two weeks but so few large lots of honey have been sold during the two-week period that it is difficult to determine the extent of the decline. Enclosed with this issue is a tabulation giving monthly summarizations of the prices of several typical honeys from 1921 to date. These were averaged from the Semi-Monthly Honey Market News Reports and all except recent prices have appeared in the Yearbooks of Department of Agriculture.

Monthly Report of Honey Producers

Early in June we sent the following questions to honey producers: 1. At what price has honey been sold or contracted for, if any, in large lots (carload lots or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, Fancy and No. 1, per case? 2. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, Fancy and No. 1, per case? 3. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, Fancy and No. 1, per section? 4. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 5. How does the number of colonies that are in condition to store surplus honey this season compare with the number of such colonies last year? Give answer in per cent. 6. What is the condition of the honey plants at this time in your locality, as compared with the average? Give answer in per cent. 7 What is the per cent of winter and spring loss of colonies (if any) in your locality? Give answer in per cent. 8. What is the present condition of the colonies in your locality as compared with normal? Give answer in per cent. The answers returned are tabulated as follows:

		1	2		3		4	5	6	7	8
Date			To		To consumers			No.	Cond.	Pct.	Cond.
Rec. June	State Name	Large lots Ex. Comb	Grocers Ex.	Cb.	Ex.	Comb.	Movement	of colo.	of plants	of loss	of colo.
8	S-Calif. (L. L. Andrews)				.90	.25	Rapid	100	40	10	90
12	C-Calif. (Davis Bros)		.75	5.00	1.00	.30	Fair	100	100	2	100
10	SE-Colo. (Otis E. Adcock)	.10			.75		Slow	90	100	10	90
	C-Conn. (A. W. Yates)				.79		Fair	100	100	5	125
9	S-Fla. (C. C. Cook)	.07	.60		.80		Fair	90	100	10	100
8	C-Fla. (Harry Hewitt)		.68		.80		Rapid	100	100	2	100
8	SE-Ga. (J. J. Wilder)	.07	.60	.65*	.75	.80*	Rapid	90	95	5	100
11	NC-Ills. (A. L. Kildow)				.50	.17		100	125	5	100
10	S-Ills. (Carl E. Killion)	.11	.77		.87	.22	Rapid	125	125	3	125
6	NC-Ind. (T. C. Johnson)		.60	3.00	.75	.20	Rapid	75	100	10	90
8	NW-Ind. (E. S. Miller)		.75		.85	.20	Fair	100	100	10	9(
8	W.-Iowa (E. G. Brown)	.15			.75		Rapid	110	100	7	100
8	N.-Maine (O. B. Griffin)					.27	Slow	55	100	67	35
12	N-Mich. (Ira D. Bartlett)		.75		.93		Fair	100	110		110
11	S-Mich. (Floyd Markham)	.12	.75		1.00	.20	Fair	100	80	5	100
10	C-Mich. (E. D. Townsend)							100	100		
9	E-Minn. (Floyd W. Ray)	.12	.80		.87		Slow	90	90	8	85
10	W.-Minn. (B. L. Morehouse)	.12¼	.83		.99		Fair	50	85	5	75
16	C-Nebr. (J. H. Wagner)				.79	.20	Fair	90	100	10	100
10	W-Nev. (Mrs. E. G. Norton)	.10	.57					90	80	4	80
8	W-Nev. (Geo. G. Schweis)		.60	3.00	.75	.20	Fair	70	75	20	75
8	W-N. M. (C. A. Baltzley)	.10	.50		.60	.25	Rapid	100	100	10	100
12	NW-N. Y. (Geo. B. Howe)		.75		.87		Fair	100	75	5	90
4	C-N. Y. (F. W. Lesser)	.12					Fair	110	90	4	125
6	NW-N.C.(C.S.Baumgarner)					.35	Fair	100	110	5	100
10	C-Ohio (R. D. Hyatt)	.11	.35		1.15		Rapid	100	95	6	100
10	NC-Okla. (C. F. Stiles)		.80		1.05	.25	Fair	102	95		100
8	C-Penn. (Harry Beaver)		.70		.80		Rapid	100	60	1	110
4	SE-Penn. (D. C. Gilham)		.80	4.25	1.10	.25	Fair	150	100	4	100
8	SE-S. D. (J. F. Norgren)		.70		.89		Slow	110	110	15	100
6	C-Tenn. (J. M. Buchanan)				.75		Slow	100	90		100
9	C-Texas (T. A. Bowden)		.50		.60		Rapid	60	75	40	75
10	S-Texas (J. N. Mayes)	.08					Rapid	75	75	10	50
9	S-Texas (H. B. Parks)		.45		.58		Fair	98	80	2	100
13	N-Utah (Wm. Moran)		.75		.90		Fair	100	90	20	90
8	W-Vt. (Phillip Crane)				1.00	.35	Rapid	100	90	2	100
11	S-Va. (T. C. Asher)		.56	4.00	.60	.25	Fair	90	90	5	95
8	SE-Wisc. N. E. France)	.12½			.67		Slow		100		70
8	N-Wyo. (Earl C. Reed)		.75		.89		Fair	100	100	25	100

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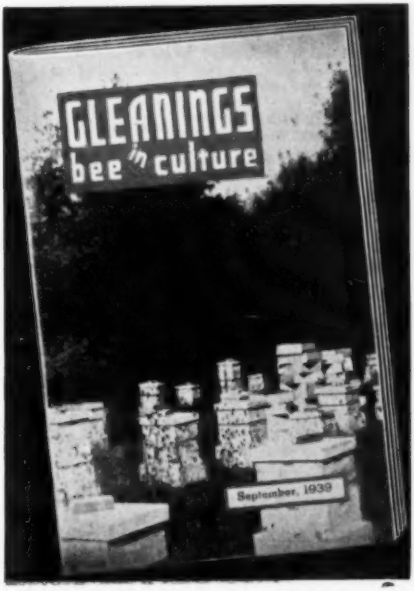

L. R. Stewart, of Newport, Indiana, and his home yard (center), with club boys and girls (left) in Newport's famous 4H Bee Club.

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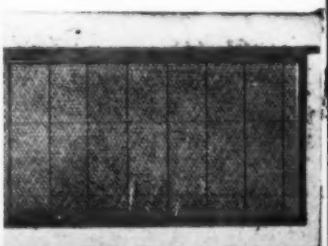
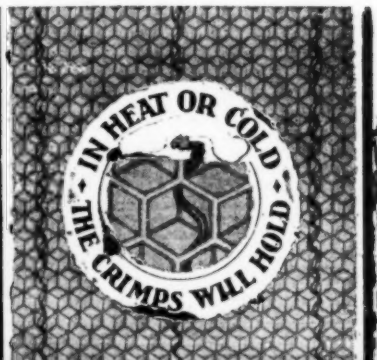




Crimp-wired, Plain, Surplus

Vol. 70
No. 7

Gleanings
in Bee Culture

July
1942

The Mystery of Nectar

By Dr. J. H. Merrill

Mark Twain once observed in effect that altho everyone talked about the weather no one did anything about it. What has this to do with nectar secretion? Perhaps more than we think.

On page 654 of October, 1941, Gleanings you expressed the hope that we would know more about nectar secretion in the future. This wish prompted me to send you some of my observations in the hope that you may add them to those you have already made for whatever they may be worth.

An investigation as to the causes of the variations of secretions of nectar offers a most fascinating field of research and one that I have long wished I could work in.

When we take into consideration the factors influencing plant growth, such as soil, altitude, and weather, we find that weather is the most changeable one of the three, and we are led to infer that there might be a correlation between the weather changes and the amount of nectar secreted.

As for fixed changes in nectar we would be more apt to find those correlated with a more stable factor of production, such as altitude. As for the differing sources of nectar they would more probably be found to correlate directly with the soils. I have heard Dr. Phillips say that he could judge the value of a locality from a honey producing standpoint by studying a soil map of that location.

To illustrate: The clovers and alfalfa do best in a limestone soil, while on the other hand there are plants which yield better in acid soil. The soil map ought to indicate which honey-bearing plants would do best in the soil it describes. You would not expect to find a Rocky Mountain bee plant flourishing on the sand dunes of Cape Cod. Furthermore, white clover has been said to produce best in localities having warm days and cool nights. Manhattan Kansas white clover yields nectar only early in the spring when we have cool nights and hot days. The nights in northeast Kansas are not a great deal cooler than they are in Manhattan. However, the average yearly rainfall is greater there and white clover is the best nectar yielding plant in that section of the state. This would seem to be an indication of a weather influence.

Alfalfa is said to be at its best when it has "wet feet and a hot head." These conditions are ideally met in western Kansas where water can be found six feet below the surface and where, as everyone knows, there is plenty of heat. Since it has been found at the Kansas Experiment Station that alfalfa roots will reach down thirty feet, a mere journey of six feet in search of moisture would be but child's play for it.

Clethra or Pepper Bush is a shrub found in our eastern swamps that yields a very fine grade of nectar, but it yields only during dry periods. An

explanation has been offered that rains would wash the nectar out of the blossoms, but this does not seem reasonable. In fact, I would not even venture an explanation.

As for the influence of altitude: Alfalfa in Colorado produces a water white honey. As one journeys eastward to lower altitudes he will find a constantly darkening color until at Manhattan, Kansas, the alfalfa honey will be a distinct amber.

That good beekeeper, A. V. Small, of Augusta, Kansas, noticed that "alfalfa does not produce nectar in Kansas under conditions ordinarily found below 1,000 feet in altitude." We have checked and rechecked on this observation and found it to be correct, like all of A. V.'s conclusions.

Topeka is about on the border line of the 1,000-foot altitude location, and alfalfa occasionally yields nectar in this locality and then again it will not. Altitude does not change so we must look to the weather change for an explanation. When it does it is at a time when it will have "wet feet and a hot head", that is a period of drought.

I have never seen any of the alfalfa honey raised in the Imperial Valley of California below sea level, but I am told that this is a very dark honey.

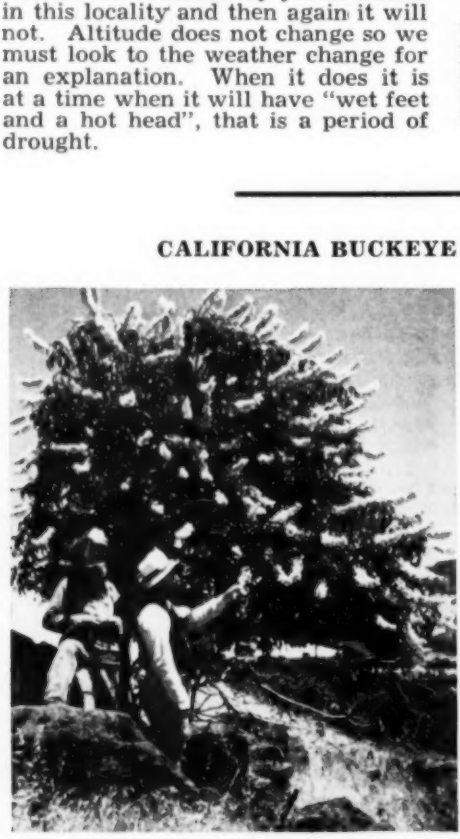
Heartsease honey seems to be the reverse in color and quality of alfalfa, that is, as the altitude decreases the color becomes lighter and the quality improves. In those places where alfalfa never yields nectar Heartsease is at its best.

As for the question of soils, that would be too long to take up now, but every beekeeper knows that certain honey-producing plants always do better on soils favorable to their growth. One instance of this, again, would be alfalfa, which in the limestone soils of Kansas can be grown anywhere, whereas in the eastern part of the country soil has to be inoculated in order to grow alfalfa.

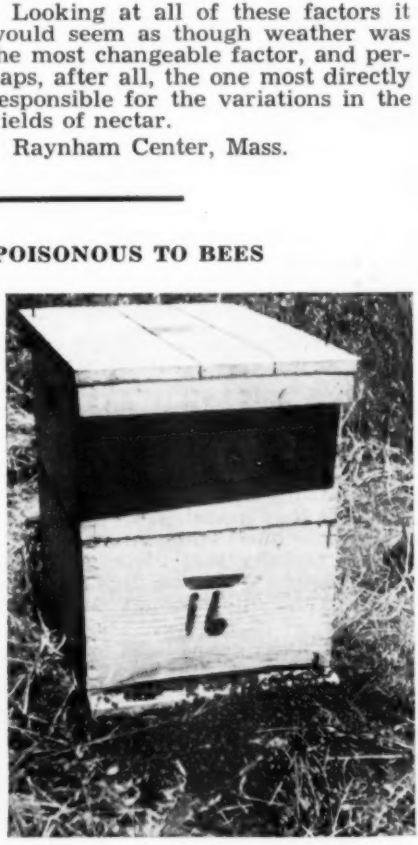
Looking at all of these factors it would seem as though weather was the most changeable factor, and perhaps, after all, the one most directly responsible for the variations in the yields of nectar.

Raynham Center, Mass.

CALIFORNIA BUCKEYE POISONOUS TO BEES



Mr. George Triphon and C. P. Mallory inspecting the California Buckeye, which is found only in parts of California.



Bees dead from poisoning as a result of gathering nectar from the California Buckeye.

Variations in European Foulbrood

[There has been not a little discussion in The Bee World, headed by Annie D. Betts, London, England, regarding the variation in symptoms of the disease known as European foulbrood. Years ago we pointed out this variation in California. Finally Bacteriologist A. P. Sturtevant, of the Bureau of Entomology, went out to that state to note the conditions. He became convinced that there were secondary invaders. Referring to the variations as noted in The Bee World we wrote to Dr. Sturtevant of the Bee Culture Laboratory, of the Intermountain States at Laramie, Wyoming. The following letter will help to explain where and how this particular disease may have secondary invaders. We take pleasure in presenting Dr. Sturtevant's reply here.]

I have read with considerable interest the copy of your letter of February 17 addressed to Miss Annie D. Betts, accompanying your letter to me of February 18. I assume from reading this letter to Miss Betts that your assumption is that there are variations in the manifestations of European foulbrood and that the European foulbrood in America has somewhat different manifestations than the disease as it is found in parts of Europe.

I think that our investigations in this country will back up this assumption. As you will recall, the results of my trip to California in 1919 to investigate the peculiar manifestation of European foulbrood, which seemed to be worse than usual during that period indicated that *Bacillus alvei*, associated with the disease, brought about abnormal symptoms. This was discussed in an article by you in the May 1919 issue of Gleanings. Furthermore, in my paper, entitled, "A study of the behavior of bees in colonies affected by European foulbrood," Bulletin 804 of the U. S. Department of Agriculture, it is also suggested that the symptoms of European foulbrood will vary according to the active presence or absence of certain secondary invaders, particularly *B. alvei*. This subject also was discussed in a paper by me entitled, "Brood disease variations: Explanations for some of the confusing symptoms encountered in the brood diseases of bees," which appeared in the May 1922 Gleanings. Also, in 1925 there was another paper by me, entitled, "The relation of *Bacillus alvei* to the confusing symptoms of European foulbrood," published in the Journal of Economic Entomology, Vol. 18, No. 2, pp. 400-405.

More recent work by Lochhead and by Burnside has indicated that possibly what we have known as *Bacillus pluton* may be simply a variant in the life history of *Bacillus alvei*. Even if this is so, although I doubt if it has been satisfactorily confirmed, the variations in symptoms of European foulbrood still might be explained by possible variations in the biological activity of the various life cycle phases of the organism, the *B. pluton* phase killing the larva with typical symptom manifestations and the *B. alvei* phase when predominant causing the decomposition and variable symptom manifestations such as noted in California in 1919. I think further work on this problem is necessary, particularly in the light of Miss Betts' preliminary report in the January, 1942, Bee World that Dr. Burri of Switzerland has succeeded in growing on artificial culture medium an organism which he claims is identical with *B. pluton*.

Furthermore, it is possible that other secondary invaders may be able to overgrow *B. pluton* at times, causing other variations in symptoms. According to Miss Betts in her article in the August 1941 Gleanings in explanation of the European viewpoint on symptom variations states on page 495 that "Tarr showed, also in 1936, that *Streptococcus* apis was in reality no true species, but was the name given hitherto in bee literature to two well-known species of lactic acid streptococci, *S. liquefaciens* and *S. glycerinaceus*. It is probable that bees collect these when they fetch water from places contaminated by cattle droppings. No doubt 'sour brood' is so prevalent in Switzerland because that country has a large cattle population, and these streptococci therefore tend to be nearly always present as secondary invaders in cases of EFB in that country."

Therefore, I believe that it is safe to assume that variations from the typical symptoms of European foulbrood may be brought about by the activities of what we have called secondary invaders, or even by the activities of variations in the growth phases of *Bacillus alvei*, if such is the case, although I believe further work is necessary on this subject.

On this basis I believe it is justified to assume that European foulbrood may show variations in symptoms in different parts of this country or in Europe.

Marketing Honey Cooperatively in the Empire State

By William L. Coggshall

An informal snapshot of Dr. E. J. Dyce, manager and treasurer of the Cooperative, better known to his friends as "Tim."

At long last New York beekeepers are making a real effort to correct some of the honey marketing ills which have become more pronounced in recent years. It is not intended to define these ills as they are apparent in the discussion of methods and policies herein described.

Late in 1938 a group of Central New York beekeepers, realizing the need for action, visited a number of honey handling plants in Ontario, and studied particularly the methods and results obtained by the Ontario Honey Producers' Cooperative, Ltd., in marketing honey prepared by the Dyce process. They returned thoroughly convinced of the practicability of establishing such a plant in the Empire State. As a result of this trip and the many meetings held to formulate plans, the Finger Lakes Honey Producers' Cooperative was incorporated in 1939 under the New York Cooperative Laws.

A comprehensive study of methods and equipment followed and negotiations were opened to secure a license to use the patented Dyce process.

On its completion at Cornell University, under Doctor E. F. Phillips, the process developed by Dyce was given by him to Cornell; its use in the United States to be under the supervision of the University. The Cornell Research Foundation has secured a patent for the process to prevent unscrupulous persons from using it and to make sure that only the best possible product be prepared. There are many points in using the process which any ordinary person has neither the technical knowledge nor the necessary equipment to master. The royalties obtained by the Research Foundation from its licenses are used to further research on honey and to insure no misuse of the process.

When this method of treating honey was discovered by Dyce, a graduate student at the time, it was acclaimed by responsible people acquainted with its possibilities, as the one bright opportunity for beekeepers to realize more money and a wider demand for their honey. There is every reason to believe this is true and a few years of marketing will prove the point as it already has in Canada. It has been interesting to find that, despite past statements by writers in the U. S. bee journals to the contrary, people prefer honey in crystallized form. There is absolutely no question in our minds but what the vast majority like it best. Naturally there are some exceptions but they are very few in number. In the first year of packing honey in this form the increase in sales each month has been most gratifying.

Doctor Dyce was consulted freely and offered valuable advice concerning special equipment and plant setup.

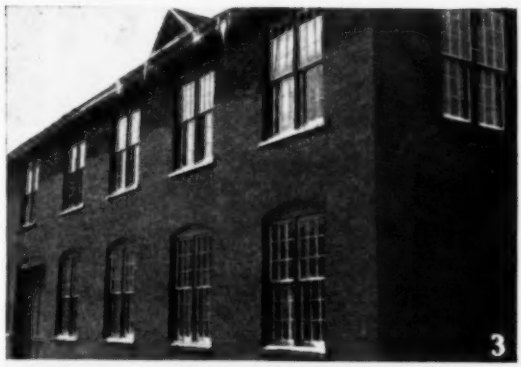
A special problem was the location for a plant. Groton was finally selected because suitable buildings and a railroad siding were available, and located on the property was a splendid artesian well of cold water (temperature 47) which would make cooling of honey an inexpensive item since water is usually refrigerated for the purpose. In addition to these valuable assets electrical power is less expensive there than in most sections.

Equipment was secured and partially installed when Doctor Dyce was persuaded to come to Groton as manager late in 1940. The splendid progress to date may be traced directly to his ability and efforts.

The operation of the Cooperative is patterned as closely as New York conditions permit after the successful Ontario organization.

Every effort is made to pack honey as carefully as possible in the most attractive and modern containers. New types of containers made necessary by war measures are resulting in changes here, too, but some of the advantages of the containers illustrated might be mentioned in passing. The one-pound tumbler has been especially popular with the trade because of its attractive foil label and fine appearance, and with the consumer because it may be placed on the table at each meal and when empty will make a useful drinking glass. The lithographed two and four-pound containers are not ordinary "tin cans". They have a special friction opening on which it is impossible for anyone to be injured when handling, and also very important, they are lined with a special golden lacquer which prevents discoloration of the honey and injury to the flavor, so common with ordinary tin containers.

Dealership arrangements with container manufacturers result in savings to the organization (and therefore to its members) and purchases are made in carload lots. Whenever possible carlots of five-gallon cans



No. 1. Warehouse entrance, showing the manner in which kegs are moved to it from the packing plant. A small bag truck does the job very nicely.

No. 2 Three buildings comprising the Cooperative's plant. In the right foreground is the packing plant (size 40' x 80'), partly shown in No. 3 photo. At the left is a small brick warehouse (size 20'x40') for the storage of packed wholesale containers of honey. In the background is the large bonded warehouse (size 60'x150') to which members deliver their honey for grading and storing until sold or packed. On the second floor are stored containers and other supplies.

No. 3 Brick building in which packing is done and retail size containers of honey are warehoused prior to shipment.

No. 4 A corner of the warehouse. These containers are all full and are not piled this high just for fun but to conserve space. The kegs hold 160 lbs. and are used for buckwheat honey.

No. 5 The popular one-lb. tumblers, no longer manufactured by the glass company due to the war effort.

No. 6 Packed one and two lb. containers ready for shipment.

No. 7 Two and four lb. lithographed tin containers with special friction openings. These are treated inside with a sanitary lacquer preventing action of honey on the metal.

are routed direct to beekeepers' stations for unloading and producers thus save in their purchases. The Cooperative expects to supply free containers to all members as soon as it is possible to do so. When this arrangement is adopted beekeepers just becoming members will be expected to supply containers the first year and receive free ones thereafter.

Five-gallon cans emptied at the plant are carefully washed and dried. They are then ready to go out again to producers for refilling. This effects a substantial saving, since with reasonable care the cans may be used several times.

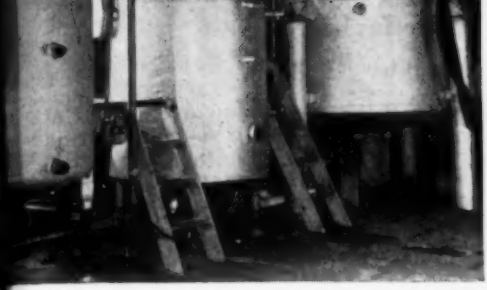
Cooperation makes possible collective blending and packing. Uniformity of product and continuity of supply throughout the year are highly essential in this modern age; all channels of trade demand it. A glance through any chain store will prove that the buyers obtain practically all their honey from cooperatives or large packers able to supply this service. The Finger Lakes Honey Producers' Cooperative has modern equipment and is packing a standard uniform product for bakers and bottlers as well as the retail trade.

Cooperation provides for the collective selling of honey in an orderly manner. The entire crop is gradually sold over the whole twelve months period at the best possible prices that can be secured, not sold at the beginning of the season or held for long periods in the hope that the price will advance. Cooperatives cannot afford to gamble on the market. The return to each producer for his honey is based on the average selling price of honey throughout the year, varying according to grade. By this method each member is assured of receiving a fair average price for his crop. For many years it has been known that higher prices could be obtained for buckwheat honey if the crop were sold in an orderly manner. One of the original reasons for establishing the plant in the heart of the buckwheat area was to help bring this about. It should be emphasized that this organization handles both clover and buckwheat of all grades and also any other flavor its members produce.

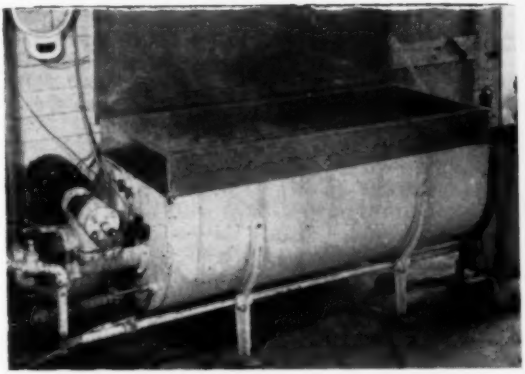
It is not expected that cooperation will produce any sudden advance in prices, but each member will be assured of a steady market for his honey at the best possible price. This means a great deal to most beekeepers.

Unlike old-fashioned cooperatives, members are not required to ship all their honey to the cooperative. While members are encouraged to sell most of it in this manner they are also encouraged to keep sufficient for their local trade. At the beginning of each season members are required to fill out and forward crop registration forms. On the form is recorded an estimate of the amount and grade of honey the member plans to sell through the Cooperative. Later the exact amount is sent in on another copy of the form. This procedure helps the Cooperative determine the approximate size and quality of the crop at an early date, a factor important in determining prices and marketing emphasis.

Through the cooperation of the Springfield Bank for Cooperatives an advance of from one to three cents



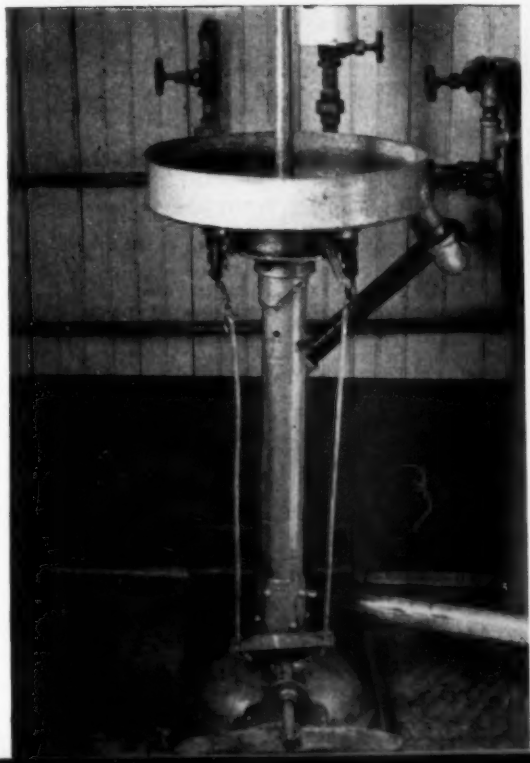
Nos. 8 and 9. Views of the processing room showing the glass-lined equipment for blending and preparing honey for market. The O.A.C. strainer is shown in No. 8 directly above the center tank. Directly above this room is ated a hot-room in which five-gallon cans of honey are inverted without caps and from which the honey runs into some of the tanks shown. Dry heat is used and empty containers are not injured as they often are when a water bath or steam is used for liquefying purposes. Also very important, the honey moves directly out of the hot room as fast as it becomes liquid thus preventing unnecessary over-heating.



No. 10. Coil vat in which blended honey is cooled by artesian water and where "seed" is added previous to packaging. From here the honey is pumped to large glass-lined holding tanks directly above the packing room. It then flows by gravity to the filling machinery below.

(or more, depending on market value for the honey) per pound may be given at once to members on delivery of their honey to the Cooperative's bonded warehouse next door to the plant. Hampered by only a small bonded warehouse to provide this service, the members and directors voted to acquire the large warehouse shown in one of the illustrations accompanying this article. This building provides plenty of space and will

(Continued on page 444)



No. 11. This ingenious device (made by a mechanically gifted Cooperative member, from a Model T Ford differential and axle housing and a Dodge brake drum, and even a leaf from a car spring) washes five-gallon cans as they are removed from the hot-room. Foot pressure on one end of spring leaf, in center foreground, opens hot water valve; depressing the other end serves up live steam, either of which are blown through jets into the can inverted over pipe in center of drum. The drum carries away waste water. Containers are then dried carefully and are ready for reuse. The floor in the washing and drying room is of metal and is well drained for easy cleaning.

Fire Blight

The Role of the Honeybee

By William Smukler

The first plant disease ever discovered to be caused by a bacterium was fire blight.

The name, fire blight, was appropriately chosen, for though the bacteria are so microscopic that 25,000 of them end to end measure an inch, still when optimum conditions prevail, the disease has manifested such destructiveness that fruit growers have been unable to cope with it. On the Pacific Coast, the apple and pear industry was threatened several times to be totally destroyed. In King's County, California, there were more than 40,000 pear trees in 1902; not a tree remained by 1904. Bartlett-pear growing, once a thriving industry in the eastern part of the United States, has been hard hit. In the Mississippi Valley, apple trees were attacked with such rapidity that growers have hesitated to plant new trees.

In 1794, the first report of fire blight came from the Highlands of the Hudson River. Where did the disease come from? Surely not with the immigrants from Europe, for the disease was unknown there. Not even one authentic case of fire blight was reported outside of the American continent up to 1919. Despite this, a number of plant pathologists believe, and with some justification, that the disease was of oriental origin.

Fruit trees from the Orient show striking resistance to the disease, resistance which probably could have only come about by exposing the trees to this disease for centuries. Natural selection would have then weeded out the highly susceptible trees and would have permitted fire blight resistant trees to survive. But how can they fully account for certain of the oriental species, such as the loquat tree, which are rather susceptible to the disease?

Some believe that fire blight arose in the northeastern part of the United States. There are enough native plants here on which the disease could have lived, for more than 70 members of the Rose family are susceptible to the disease. This whole question of origin is still shrouded with mystery.

Fruit growers early in the settlement of our country began planting and cultivating trees on the fertile soils along the Highlands of the Hudson River. The trees were succulent, and, therefore, the disease found an excellent medium in which to fully express itself. The disease was first recorded as one "which destroys the trees in fullest vigor and health, in a few hours turning the leaves suddenly brown as if they had passed through a hot flame, and causing a morbid matter to exude."

The disease gained ground slowly in America, for not until 1900 was its presence known in California; already more than one hundred years had elapsed. One might assume that since the honeybee was introduced in the region where fire blight was prevalent, bees and fire blight might have advanced across the continent "hand in hand." But this is highly improbable, as later facts bear out.

The twigs of nursery stock that have been attacked by the disease have been examined; bacteria of fire blight remained viable on them for many months. Prof. E. M. Hildebrand of Cornell explains the slow advance of the disease by pointing to the fact that in the early days of our country, fruit trees were bought locally. By 1900, nurseries had won national recognition. Growers from various parts of the country sending to the region where fire blight was present for nursery stock, would receive one or more trees with twigs that were infected. After 1900, the disease spread rapidly, making its way down to Mexico and up to Canada.

In 1919, the disease suddenly appeared in New Zealand, and played havoc with the fruit industry. Desperate, the New Zealanders tried various measures to prevent its spread from the North Island. Because bees were seen working the blossoms, the bacteriologists made a regulation forbidding shipments of bees from the North Island to the South Island except after a six-day quarantine at a specified place. Fire blight continued to spread. This spread may be attributed largely to

the hawthorne trees, which were so numerous that they bridged the gap between fruit plantings.

There is little question in the minds of many as to how the disease reached New Zealand. The United States by 1919 was the forerunner in introducing new fruit varieties. Some enthusiastic hobbyist or grower in New Zealand probably had one or more of these varieties shipped to him from America. Harbored in the twigs of one or more of these trees was fire blight.

What Role Does the Honeybee Play in the Spread of Fire Blight?

If some of the flowers are already contaminated, bees will carry the bacteria from flower to flower. This in itself is but of minor importance, for flowers must be pollinated in order to obtain a set of fruit; any agency that performed pollination would necessarily spread the bacteria. Then, too, fire blight in the blossoms can be controlled by spraying with a bordeaux mixture. The question revolves itself, not on how the blight spreads from flower to flower, but from where did the blight come that was in the blossoms? Another important question is: How had the blight entered a tree when no flowers were present on it?

Around 1930, a research worker, H. R. Rosen, presented a case against the honeybee. He thought that the bacteria could live over winter in the bee hive and during fruit bloom the bees would spread it. He gathered what first appeared as convincing evidence; out of 3534 inoculations of succulent Bartlett pears, 21, performed in January, February, March, July, November, and December, showed symptoms of blight. All told, though, only ½ of 1 per cent showed blight. He himself stated that in several occasions infection had crept in. How this happened he was at a loss to say. In such cases, he threw the whole lot out and started over. In all probability in this particular lot of trees just mentioned, infection crept in without his detecting it. This seems to be borne out by his later work. The work of all other investigators throws complete doubt on his results.

Practical experiments were set up. Whole colonies were moved from a district where fire blight was plainly evident to a district free of fire blight. Also, virulent cultures of the bacteria were introduced into the bee hive. The bees were placed beneath an apple tree which was enclosed with cheesecloth. Even under these favorable conditions, for the spread of the disease, blight did not result. E. F. Phillips and Prof. E. M. Hildebrand of Cornell found that the bacteria, introduced into honey, died in about two days.

Prof. H. H. Whetzel of Cornell, states, "There can be little question that hold-over cankers are the usual source of primary inoculum." These cankers are oozing droplets of bacteria in the spring. Rain probably splashes some of the bacteria to other parts of the tree, but the carriers mainly responsible for the spread of the bacteria are insects. Flies often feed on the ooze. Viable cultures of the bacteria have been isolated from vinegar flies six days after the bacteria had been fed to them. Some other insects that visit the ooze are ants, aphids, tarnished plant bugs, bark beetles, leaf hoppers, apple tree borers and curculios. Honeybees have never been seen visiting the ooze. A few isolated cases have been reported, but they were checked, and it was found that flies mimicking bees were responsible.

A number of these insects that visit the ooze will fly to the flower as soon as they appear. Prof. E. M. Hildebrand explained that whereas the ooze from the canker has only one per cent sugar, nectar in the flowers has twenty per cent and would therefore attract the insects.

Nursery stock and trees that were not blooming often blighted. Honeybees were absolved, for there were no blossoms. Insects which had been on the cankers had probably migrated to the nursery stock. E. M. Hildebrand had planted a number of trees on ground about half a mile from any blighted trees. These trees next year were covered with aphids and other insects; all the trees were badly blighted. Insects such as aphids or leaf hoppers could readily transmit the blight, for they have piercing mouth parts which they extend into the succulent tissue of the tree.

The way bees were first blamed for over-wintering fire blight and for other things that they supposedly did, reminds me of how bees were likewise blamed for destroying grapes. In both instances, it was later proven that the honeybee was innocent.

These two examples are proofs that one should not be too hasty in passing judgment.

Ithaca, N. Y.

Honey Bread

By Brother Pancratius, C. SS. R.

In December, 1940, Brother Edward, C. SS. R., my predecessor as baker and beeman for St. Mary's College, was suddenly taken ill. Since I had acted as baker several times, I left my tailoring and took over the baking. A few days later I was asked, "Brother, will you take over the bees?" "Sure," I answered, with the spirit of adventure, "I will try my luck." So I began to burn the midnight oil and read up on bees. It's great to have a bee library. I have Gleanings since 1914 and several text books on bees from the library of the late Rev. Father Martin Hepner, C. SS. R.

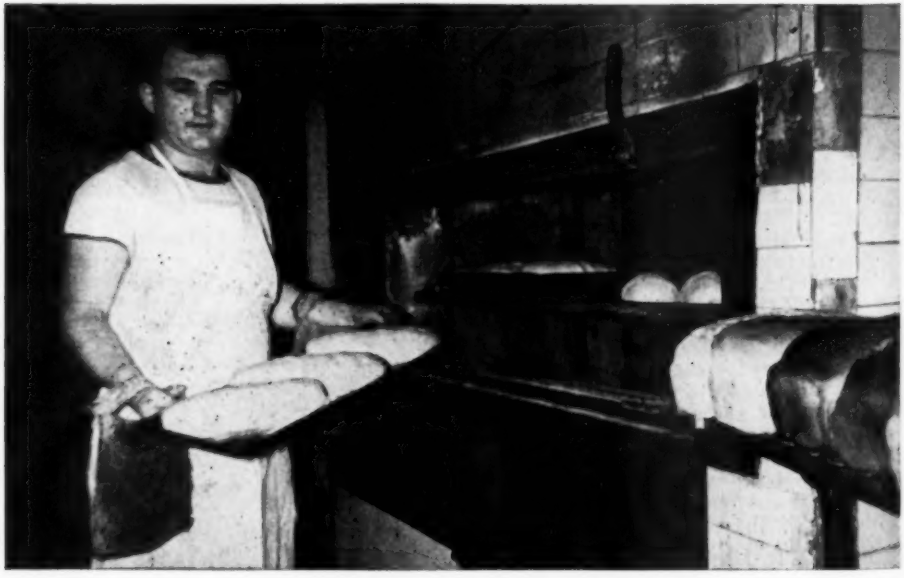
Honey was served to the boys one week, as I found several cans of dark honey. That day and for a few days after, all I heard was, "Gee, Brother, that honey is so strong that you can't eat it." To serve it on the table was out of the question, so I decided to try it in bread instead of sugar. I used the same amount of honey as I would have used of sugar. It went over with a bang. The boys liked it very much. But there was something wrong; the bread was good but heavy and the inside had a brown color.

I began to cut down on the honey and at once I noticed an improvement. I worked it down to about one and one-half pounds of dark honey to 100 pounds of flour.

Since I have been using less honey I find that my bread and rolls are good; if I add more, they're not so good. A faint flavor of honey is noticeable in the bread. The amount used should be left to the baker who knows the grade of his honey. He can not always get the same kind and flavor of honey. Sometimes it will take more or less. Table grade honey need not be used. I use second grade honey, even off-grade. It is my opinion that about 1 lb. to 1¾ lb. for 100 lbs. of flour is plenty.

In baking, many things must be considered; the ingredients that are used, such as flour, milk, salt, shortening, and malt. The baker may have to change his formula. That is why no set percentage of honey should be used in baking bread.

Honey will caramelize when used in bread due to the high heat. The crust will, therefore, have a rich brown color. To see how long it will remain fresh, I left a loaf of honey



Bro. Pancratius, C.SS.R., about to put a tray of loaves of honey bread in the big oven.

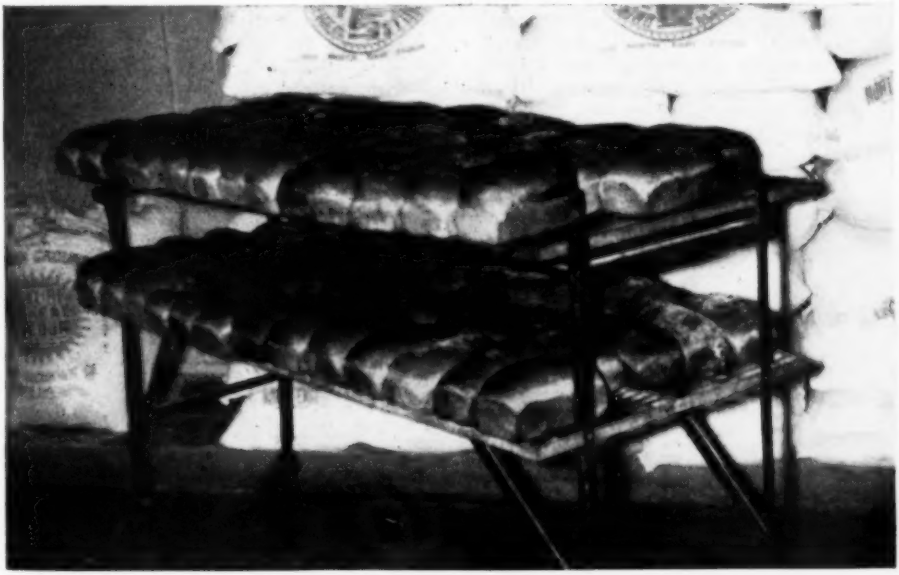
Bro. Pancratius in his apiary which produces the honey used in making the bread to feed to the boys at St. Mary's College.

bread in the open air. As one could expect, the crust was hard. I cut the first slice in about two weeks and found the bread to be still soft. Honey preserves bread longer as it keeps it moist.

Honey in raisin bread is just grand. I increase the amount of honey to 2 lbs. to 2¼ lbs. for 100 lbs. of flour. This gives the bread a strong pleasant flavor of honey. If I used sugar, it would take 4 lbs. more. Saving the 4 lbs. of sugar makes it possible to use honey. Not only that, but the bread is much better.

This recipe is for white bread. Change it to suit yourself. Do not be content with the first batch; try another, using more or less honey. The honey can be light or dark, liquid or crystallized.

Six gallon batch (about 95 loaves):



Honey bread hot from the oven at St. Mary's College, Northeast, Pa.

Freshly baked bread arranged on trays for cooling.

Honey bread ready for the next day.

Flour, about 84 lbs., milk (dry), 4½ lbs., water, 48 lbs. (6 gals.),honey, 1 lb., salt, 1½ lbs., shortening, 2¾ lbs., yeast, 2¼ lbs., malt, ½ lb.,

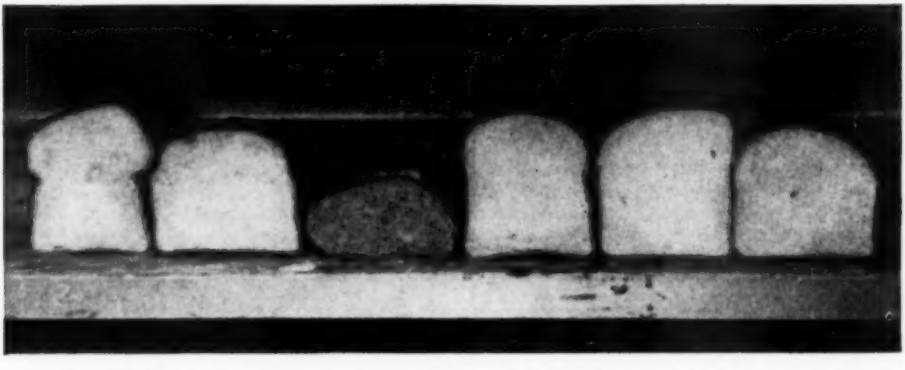
One quart batch (about 4 loaves): Flour, about 3½ lbs., milk (dry), 3 oz., water, 2 lbs. (1 qt.), honey, 3 tablespoons, salt, 1 oz., shortening, 1½ oz., yeast, 1½ oz., malt, 1 teaspoon.

Mix flour and milk together and leave standing. Dissolve in water, the yeast, salt, malt, and honey. Water should be about 80° F. When all is dissolved, add the flour and the milk. Mix the dough thoroughly for some time. The dough should not be soft. After it has been well mixed, let it stand and rise until about double in bulk, which will take about one hour and a quarter. Then knead and let rest for a half hour. Bring dough to the bench and cut up into 1½ lb. loaves; make up and proof for one hour. Bake in oven at about 375° F., for about 40 to 50 minutes. If you wish, you may wash the tops. If dry milk or malt are unobtainable, make the bread without.

If you wish a nice raisin bread add 1% to 1½% more honey and the raisins. It is well to have a little more yeast also, and cinnamon to taste.

If you try the above recipe I would suggest you try it with and without the dry milk and malt, and let me know the results. I often omit the dry milk and malt myself. I make daily, as a rule a six and ten gallon batch. I try to keep a day ahead of the boys. Sometimes they slow up a bit, but I do not worry—the bread keeps fresh.

[You are right. Too high a percentage of honey to 100 lbs. of flour makes the bread soggy. The testimony offered at the Hearing in August last was for a 5% or less. —Ed.]



Five-day-old bread, still fresh. In order, from left to right: 5 days old, 4 days, rye bread. 3 days old, 2 days, 1 day, fresh.

The Flash or Government Plan of Filtering Honey

The Importance of Quick Heating and Quick Cooling of Honey to Retain Flavor

By L. C. Gardner

[In our last issue we published Mr. Gardner's article on the pressure or flash method of filtering honey as described by Mr. Paine and Mr. Lothrop in 1934. We now present the second installment on why this new plan is superior to the old method.—Editor]

Let us draw a comparison between the old method and filtering and perhaps we can find something here which will clear up the point.

The old method involves the heating of the honey to 160° F. either in the liquefying tank or later in a jacketed tank. If the honey is heated in the liquefying tank to the above temperature, it is then poured into the bottling tank through a cloth strainer. The entire lot is poured over and the entire mass of hot honey will remain so for some time before it can all be drawn off. Sometimes the honey will stand 2 or 3 hours. This is true of honey heated in steam jacketed tanks. In either case several hours will have elapsed before the honey is finally drawn off during which time essential oils can be lost and scorching can occur.

As pointed out, with the government plan of filtering the temperature is flashed to the 160° F., passes into the filter where it loses some of its heat and out of this into the receiving tank from which it is immediately bottled. Thus it is never permitted to build up into a large bulk where it will remain hot for long periods of time before it can all be bottled. Another point is that from beginning to end of the entire process it is held in a tightly enclosed line.

We can draw the conclusion that the old method had its bad points as well and perhaps any and all processing is bad. We may even apply this statement to the extractor. A good section of new comb honey is tops regardless of how fine the quality of the extracted honey may be. The best extracted honey can't hold a candle to it. And perhaps the reason that extracted honey has pushed it off the market can be explained by the fact that extracted honey can be kept in constant supply while comb honey by its nature is more or less a seasonal proposition. Price, of course, has had something to do with it as too has been the difficulty in packing and handling it. A bottle of honey in the market basket is more dependable than a section of comb honey.

Take a section of new comb honey and cut it. Now pour some extracted honey in a receptacle by the side of the cut section of comb. The pearly white crystal clarity of the liquid honey from the section is in striking contrast to the extracted honey.

Why This Difference

Extracting combs usually have some pollen stored in them and may be darkened with age. Again they usually receive a coating of dust over winter in the storage room which is not always removed in its entirety by the bees before they deposit nectar into the cells. The extractor in motion creates a sort of vacuum and draws into it all the smoke and dust in the extracting room near enough to be affected by the vacuum of the whirling extractor. All of this foreign matter now becomes a part of the extracted honey. In addition it receives a charge of microscopic air as it is drawn out of the combs. Here is where the flash pressure filter comes in to restore the honey to as nearly the original form as when it was placed in the combs.

How to Liquefy Granulated Honey

Again referring to the methods used in liquefying granulated honey, I explain how it can be more safely accomplished for the benefit of those who are erring.

There are several methods used for this purpose. Most common of these, and with the smaller bottler, is the water bath. Another is by the hot room method from which the oven idea developed. Last and perhaps the safest and best is the chest of steam pipes.

With the water bath method wherein the honey is to be heated to bottling temperature, the system should include a **thermometer** and close at-

(Continued on page 441)

No Need for Coaxing

By Mrs. Benj. Nielsen

Honey fruit bran bread sandwiches take the place of honor on this tempting appetizer tray for the "Fourth". — Photo by Ruth Oviatt, Kenyon and Eckhardt.

We did it before and we can do it again. I mean—get along with less sugar, or without any sugar at all. Many interesting facts have come to light during the varied discussions of sugar rationing, and the problem of how to manage with less of this refined and often called "un-nutritive" food. Statistics reveal that in 1825 the per capita use of sugar in this country was 10 pounds. In 1935 it stood at 125 pounds! Amazing! Little by little, through advertising and small but ever increasing amounts of sugar called for in new recipes, over-the-counter or over-the-fountain goods, the consuming public has been educated to use larger and larger amounts. In fact, the exclusive use of refined sugar for sweetening this, that, and everything has become a habit—and a bad one. There are many other sweets not only more nutritious but far more exciting in flavor. Honey stands second to none on both counts.

Through the years, one of the chief obstacles to honey selling has been the oft-met argument that honey is expensive. Now through authoritative and impressive channels of leading magazines and other publications (not merely from beekeepers or those who have honey to sell), housewives, consumers everywhere are faced time after time with the comparative values of honey, sugar, and the sirups with which honey has always competed. These values are worth repeating here and DO NOT miss any slightest opportunity to pass them along. In sweetness, three-fourths of a cup of honey is equivalent to one cup of sugar. Furthermore, it takes one and one-half cups of molasses, sorghum, and maple sirup to equal the sweetness of one cup of sugar (remember honey is sweeter than sugar) and two cups of corn sirup to give the sweetness of sugar. So you see, honey bows to none of these when it comes to sweetness, ease and rapidity of assimilation, production of quick energy with no harmful after-effects, and fine distinctive, exciting flavor. Facts worth thinking about and acting upon.

This is the month of picnics and impromptu outdoor meals. Indoors and outside, you will find the family will need no coaxing to try these honey-way offerings.

Honey Strawberry-Nut Ham Slice

Place a slice of ham, about one inch thick, in a shallow baking dish. Over it pour 1 tablespoon of honey and 2 tablespoons water well blended. Bake in a moderate oven, 350 degrees F., for 1½ hours. The sauce goes like this: One cup sliced strawberries, ½ cup honey, ¼ cup walnut meats, chopped, and 2 tablespoons lemon juice.

Combine ingredients and heat to boiling. Pour over slice of ham and bake 15 minutes longer.

Potato Salad Deluxe

One and ½ quarts cooked potatoes, diced (do cook them with their jackets on!), 4 hard cooked eggs, chopped, ½ cup diced cucumber, 4 tablespoons minced pimiento, 4 tablespoons minced green pepper, 1 cup diced celery, 4 tablepoons grated onion, 2 teaspoons salt, ⅛ teaspoon pepper, ⅛ teaspoon paprika, ¼ cup honey, ¼ cup vinegar, and 1 cup salad dressing.

Combine all ingredients except honey, vinegar, and dressing. Heat honey and vinegar to boiling point; skim. Pour over potato mixture, mixing well. Add salad dressing and mix thoroughly. Serve thoroughly chilled. Serves 8 to 10.

Honey Tomato French Dressing

Four tablespoons tomato catsup, 4 tablespoons lemon juice, 1 tablespoon honey, 1 teaspoon dry mustard, 1 teaspoon Worcestershire sauce, 1¼ cups salad oil, salt, pepper, and paprika to taste.

Combine ingredients, place in a quart jar, adjust lid tightly and shake

until thoroughly blended. If mixture should separate, shake again before using. If you are partial to garlic, try adding a clove and just let it float in the dressing. Extra good to carry along when you prefer to toss a green salad or prepare a fish concoction just before you call 'em to the picnic table.

Those who are iced coffee devotees will find this recipe a grand and thoroughly refreshing one for a hot afternoon. Dissolve 3 tablespoons of honey in 2 cups of freshly made coffee. Chill. Pour into freezing tray and freeze to a stiff mush. Then beat 2 egg whites until stiff but not dry. Beat into frozen mixture, beating until fluffy but not melted. Continue freezing until firm. Fill tall chilled glasses about two-thirds full of frozen mixture. Over this pour freshly made hot coffee, top with a bit of the frozen mixture and serve at once.

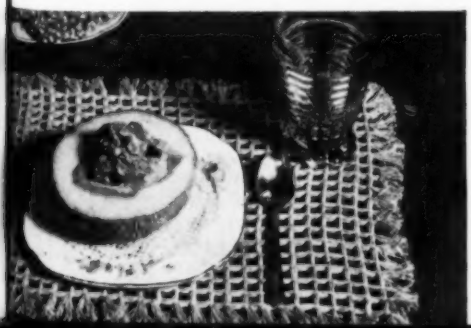
We are urged to include more and more fruits in our daily menus because of their precious health-giving minerals and vitamins. Here is a recipe which surely "fills the bill!"

Honey Fruit Mousse in Cantaloup Cup

One cup of strawberries, ½ cup of grapefruit sections, from which all membrane has been removed, 1 cup apricot nectar, ⅓ cup honey, and ¾ cup whipping cream.

Mash strawberries, shred grapefruit segments, add apricot nectar and honey and let stand at least 30 minutes, longer if possible. Fold in whipped cream. Freeze without stirring. Serve in thoroughly chilled cantaloup halves.

Delicious, wholesome honey fruit bran bread sandwiches take the place of honor on the appetizer tray for the "Fourth". Spread with softened butter or cream cheese, reinforce with carrot and celery strips and ripe olives stuffed to munch, and frosty glasses of tomato juice waving tiny flags to show "they're still there"—what more do you need unless it be the recipe that goes like this:



Honey fruit mousse in cantaloupe cup holds an abundance of health-giving minerals and vitamines, plus quick energy.

Honey Fruit Bran Bread

One egg, ⅔ cup honey, 1½ cups Kelloggs All-Bran, 1 cup buttermilk, 2 cups sifted enriched flour, 1 teaspoon salt, ½ teaspoon soda, 2 teaspoons baking powder, ½ cup chopped figs, ½ cup chopped dates, ½ cup raisins, and ½ cup of chopped nut meats.

Beat egg well; add honey, All-Bran and buttermilk. Sift flour with salt, baking powder, and soda; add to first mixture with fruits and nut meats. Stir only until flour disappears. Bake in greased loaf pan with waxed paper in the bottom, in moderate oven, 350 degrees F., about 1 hour. Yield: 1 loaf 4½x9½ inches.

Honey Rolls

Two cups milk, scalded, 2 teaspoons salt, ⅓ cup honey, ⅓ cup shortening, 1 cake fresh, or 1 package granulated Maca Yeast, and about 6 cups of sifted enriched flour.

Combine milk, salt, honey, and shortening. Let cool to lukewarm. Add yeast and 3 cups of flour. Beat thoroughly. Gradually stir in remaining 3 cups of flour. This amount may vary with different flour; however, use just enough to make a soft dough, not as stiff as for bread. Knead until smooth. Brush with melted shortening; cover; let rise until it is doubled in bulk. Knead down. Shape in small balls and place in greased pans. Brush the tops with melted shortening. Let rise until very light. Bake in hot oven, 400 degrees F., for 15 to 20 minutes.

Honey Coconut Refrigerator Cookies

One-half cup shortening, 1 cup honey, 1 egg, well beaten, 1¾ cups sifted enriched flour, ¼ teaspoon salt, 1 teaspoon baking powder, ½ cup shredded coconut, chopped fine before measuring and packed firmly, and ½ cup roasted peanuts, coarsely ground.

Cream shortening, gradually add the honey and continue to heat until well blended. Add the beaten egg and mix well. Sift the flour; measure and sift with baking powder and salt. Stir into creamed mixture. Add coconut and nuts; mix well. Shape into roll 2 inches in diameter. Wrap in waxed paper and chill thoroughly. Slice thinly, in about ⅛-inch slices. Bake in moderate oven, 350 degrees F., 12 to 15 minutes. Unused portion may be returned to the refrigerator.

John De Burgh Leake

Apiary Hygiene

The Science of Prevention

By John De Burgh Leake

To the average Irish beekeeper, for whom I generally write, the comparative ease with which big American producers avoid or control disease seems little less than marvellous. In fact, it appears that way to me, too. Take a bee farmer owning, say, 1000 colonies, situated in several bee yards a mile or two apart. Of necessity, he must keep interchanging combs; he cannot easily control robbing or drifting; he may purchase package bees by the hundred lots and yet, when and if disease is introduced, he combats it with such thoroughness that it seems, to Irish beekeepers who find difficulty in handling an outbreak in their own small apiaries, just an incident, affecting his honey output but slightly.

True, Americans have no acarine disease to contend against, but, to make up for this, they have bee paralysis, nosema, and wax moth, in serious forms with which we in Eire are not familiar, in addition to every known variety of brood trouble, and a number of animal pests, such as ants and other insects, skunks, bears, and bee-eating birds.

How do you Americans keep a relatively clean bill of health? I have studied this aspect of bee culture closely and have come to the conclusion that you find it does not pay to tinker with disease. When you notice an infected colony, you destroy it, thus helping nature to eliminate the unfit and to breed a more resistant type of bee. Here in Eire we are too economical. In the hope of saving a hive or a few diseased bees, we risk our entire apiary and those of our neighbours.

With this policy I have never been in agreement, and recent experience leads me to believe that the cardinal principle of disease control is the destruction of infected bees and hives whenever reasonably possible, except in acarine and other complaints where the infection does not persist.

Perhaps a summary of the conclusions reached by me after more than a quarter century's experience of bee disease in Eire and Great Britain may interest American beekeepers.

I believe that if the following maxims are carefully observed, honey producers have little to fear from any bee malady.

(1) Never transfer combs, supers, or other fittings from one hive to another unless you are absolutely certain your apiary is free from disease.

(2) Do not buy second-hand bee hives or appliances unless you know their entire history.

(3) Buy swarms or packages in preference to stocks on combs. The brood diseases are not so often spread by combless bees.

(4) Always insist on a written warranty when purchasing bees, and deal only with breeders who are trustworthy.

(5) Send samples of dead brood—should any be found—and live, adult, apparently healthy flying bees for bacteriological examination at least once a year. When bees "crawl", it is a sign, not that disease—if any disease is present—has commenced, but that it is already well established. Therefore, it is wise to take time by the forelock.

(6) See that all hives are at least three yards apart, that they are facing alternate ways, and, preferably, painted in contrasting colours. "Drifting" bees, i.e., bees which cannot with certainty distinguish their own particular hive, often spread disease.

(7) Robbing of one colony by another is a fertile source of danger. Honey or syrup should never be left lying around the apiary, or in any position to which bees

(Continued on Page 443)

From the Field of Experience

THE SIGNIFICANCE OF IMMUNITY TO BEE VENOM

By Percy H. Wright

No one, of course, should allow himself to make a generalization from one instance. Therefore, when one first gets a whiff of a new generalization, he must protect himself by calling it a wild surmise, at least at the beginning. Something that many persons who have given time and thought to logic fail to realize is that no generalization can be proved true until the last instance has been garnered in — which must naturally mean never. Who was the philosopher that put it so wittily, "Every generalization is untrue, including this one."

Somehow or other, I had no faith in the alleged effect of bee stings in curing, or even aiding rheumatism. This was so, even before I took up beekeeping, and even though both my wrists were badly affected by arthritis. I cannot say why I failed to believe. It merely seemed to me like any other popular superstition, such as the influence of the moon on night frosts.

At any rate, in 1938 I took up beekeeping on a small scale, and in 1939, after I had found it both profitable and interesting, I ordered no less than 48 package colonies.

Of course, I got stung, and at first the venom affected me very strongly. Sting Number One was on my ankle, and I well remember how my leg swelled, skin tight, to the knee, and how I limped and hobbled for a full week. Another of the very early stings was on one of my already severely swollen wrists, and the sting, as can be imagined, made a very bad situation worse.

In 1938, because I did not take entire charge of the bees, and because there were only three colonies, my total count of stings was only three or four. In 1939, however, I began to accumulate them hot and fast, and every one was a punishment. When the season ended, I had not observed any acquisition of immunity, and thought of myself as naturally very susceptible to bee venom. As I was not at all in the mood to give up my newly found hobby-and-business, I was disappointed in thinking myself forced to make such a conclusion.

However, when the spring of 1940 came, I found that the first stings affected me less. I seemed to have acquired a partial immunity during the resting period of the winter. By the time the midsummer had come, a sting had entirely ceased to cause any swelling, or any discomfort after the first hot prick. Then, to my joy, I noticed that my arthritic wrists were becoming more flexible, and that the swelling was much reduced. Since then the improvement has been steady, and at the moment of writing, my wrists are in better shape than they have been since 1928.

What, then, is my surmise? It is this: That not bee venom, but the anti-body that the organism develops as a result of repeated stings, is the agent which has the power to reduce the violence of rheumatism and arthritis.

Such a "wild surmise" would explain much, the controversy on the topic, the opposite testimonials, the persistence of the rumor that bee venom is good for rheumatic symptoms. To me, who claim no medical knowledge whatever, it seems more natural that the anti-body would be a thing of value to the organism than that the poison would.

In any case, I deem my surmise a thing deserving some publicity. It will bring hope to many, and, if the hope is proved justified, great advantage to sufferers from one of the most hateful afflictions of mankind, and one of the least understood. Even if nothing happens but the disproving of the theory, some little gain will have been made, some slight addition to our knowledge.

Postscriptum: I hope the editor will stand by to prevent any discussion of my idea developing into a defence of the influence of the moon on the frost!

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BEARS SHUN BEES!

By L. H. Sweetser

Beekeepers who located their yards in clearings in the Sierra Nevada Mountains, ran into an unforseen difficulty. The traditional fondness of bears for honey at once became evident. The little black bears, roaming in protected numbers in forest territory, at once showed that their tastes for wild honey could be grati-

fied by indulgence in the domesticated variety. They raided the apiaries and in some instances destroyed whole yards.

Something had to be done to preserve the industry, and some beekeeper bethought himself of the device of the auto traveler who hooked up wires and a circuit breaker to his battery. The wires, strung about his car, protected his food and movables to perfection. Visiting bears lost all interest in the car and promptly decamped.

The bee man appealed to the Western Bee Laboratory for help. They received permission from the authorities of the Yosemite Valley to experiment with the half-tamed bears of the reservation. After trials, a system was evolved that worked. It consists of three or four wires strung around the apiary, energized with a 4-cell, 6-volt dry cell battery unit. To this is attached a current limiting device and a coil interrupter for producing intermittent shock. Bruin, upon his first examination of the fence, promptly takes a back somersault and hikes hurriedly to climb a convenient tree. After apprehensive survey of the surroundings, he cautiously descends and goes away from there. He does not return.

The contraption achieves the end for which it was devised,and another instance is clearly demonstrated that the use of a little ingenuity may overcome seemingly serious obstacles.

North Hollywood, Calif.

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A WORTHWHILE IDEA ON PRODUCING MORE WAX

By Ray Galbraith

I have been thinking about your idea of increased wax production mentioned in the April, 1942, issue of Gleanings, ever since I read it. In place of using all empty frames which the bees are slow to occupy (so I've noticed in inspection in this locality), why not use an extracted comb or a sheet of foundation in every other frame?

The bees will go up in the supers much faster and there will be less loss in the honey crop and also a larger wax crop. Also, supers without any comb or foundation may bring on more swarming.

My notion of an ideal super for this is one drawn comb in the middle of a ten-frame super, three sheets of foundation, and four empty frames placed alternately. This will give straight combs that can either be extracted or cut out and sold as chunk honey if the beekeeper has a market for it. Instead of having a conglomerated mess of cross combs which I know I would loose my patience and religion trying to do anything with, you will be surprised at the amount of good straight worker combs which may be secured in this manner.

I've been taking care of an apiary on shares for the past three years in which the owner had formerly used foundation in every other frame but had wired a part of the frames. In most of the frames it was impossible to tell which had had foundation used in them.

I sorted out all combs which were either all drone cells or had patches of drone cells of more than two or three inches in diameter. And this amounted to only about 10% of the combs in about 30 colonies.

I intend to use about 100 shallow supers this way, and I believe any one who intends to use this method of increasing the wax production will find it will pay much larger dividends in both honey and wax.

Toledo, Ohio.

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SOME THINGS I HAVE NOTICED

By B. P. Sieber

(1) That a few bees may sometimes get caught in a sudden wind and rain shower before reaching their hives. My apiary is about 60 yards east of my residence. One afternoon during a wind and rain shower which came up rather abruptly, a few bees on their way home from the west took refuge in the shelter of my porch until the worst was over. However, they did not wait for the rain to cease entirely before going on to their hives.

(2) That a few bees do not get in from the fields until after dark during fair weather. One evening after dark when the bees seemed to be all in, I moved a colony from near my back door to a new location about 50 yards away. Next morning it was raining before daylight and continued for about 30 minutes thereafter. Before the rain had ceased I noticed a huddle of about 12 or 15 wet bees on the old stand from which the colony had been moved. Later in the morning when the sun was shining it was interesting to observe the field bees returning to the old stand. They would circle around it, their number increasing until near mid-day. After this time the circle gradually grew

smaller until by late afternoon they had all found their way to the new location. This was a colony of black bees. I have heard, or read, that blacks scent out their new locations more readily than Italians; however, I prefer good Italian stock.

(3) That the only time any of my bees had something like what I believe is called "bee paralysis" was one year after being moved in early March to a location where w a t e r would stand under the hives for a while after each rain. One colony was hybrids, the others Italians. The hybrid colony was as strong as any until April, then the bees' bodies became distended, some almost like young queens. They would get on the ground, jump and crawl around, but unable to fly. Day after day there would be a handful or two like this until the colony got too weak for a honey crop and was united with an Italian colony. One of the Italian colonies became affected to a less degree but recovered in a short time. Only one Italian colony was slightly affected but soon recovered, while the the hybrid colony was not able to recover. I consider this one point in favor of the Italians.

Belle Ellen, Alabama.

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THE USE OF BEE VENOM IN THE TREATMENT OF ARTHRITIS AND NEURITIS

By George W. Ainlay, M. D.

The Fairbury Clinic, Fairbury, Nebraska

[Our readers will remember that we have published quite a number of articles from Dr. Bodog F. Beck on the use of bee stings for the cure of arthritis, rheumatism, and other ailments of like nature. It appears that he tried out all the prepared bee venoms taken from actual bee stings, and after using these with a hypodermic needle he came to the conclusion that the bee stings themselves applied direct were much more potent. He claimed that the bee venoms offered on the market may loose their potency and so he came to the very definite conclusion that the application of the stings themselves direct to the parts of the body affected gave much better results.

In favor of the bee venom, the dosage can be reduced and the effect approached gradually until the desired results can be secured.

This paper, with the title as given, favors the product as sold and which can be applied by means of the proper hypodermic syringe. We make the following extracts. —Editor.]

Read before the Nebraska State Medical Association, May 2, 1939, Grand Island. Reprinted from the Nebraska State Medical Journal, August, 1939, Vol. 24, No. 8, p. 298.

The use of bee venom in the treatment of arthritis, neuritis, and the common muscular rheumatism in this day of scientific investigation seems so irrational and illogical that one would approach it with fear. Nevertheless, the results obtained in this series have been surprising enough to warrant presentation and discussion. Its use as a remedy for rheumatism dates back to primitive times. In the Middle Ages and until recent years, it was the custom to send arthritic patients to special apiaries where a definite number of bees were caused to sting them usually over the affected joints. The infrequency of rheumatism among beekeepers is often referred to in the works on beekeeping.

Terc, in 1888, described in detail the use of bees in treating joint disease. He commented upon the fact that rheumatism did not show as severe local reactions as normal persons, and that gonorrheal arthritis was not benefitted, nor was that due to tuberculosis and syphillis. The venom itself seems to have been first used by Langer, who, in 1914 prepared a venom solution for use for children who complained of pain from stings. About ten years later commercial preparations of bee venom were introduced in Europe, and since then several foreign articles have appeared reporting favorable results from its use in most forms of acute and chronic rheumatic conditions. * * * * * *

Bee venom is probably indicated in the treatment of all forms of acute and chronic arthritis. It appears to be most effective in the extra-articular manifestations such as muscular rheumatism, sciatica, lumbago, and neuritis, and can hardly be expected to produce bony restoration in those joints where extensive changes have already taken place. It is thought by several that bee venom encourages the breaking up and absorption of fibrositic nodules in extra-articular arthritis. * * * * *

The venom itself was supplied by Sharp & Dohme, Philadelphia, as a "Rapidly Lyophilized Bee Venom Solution" in flame sealed "Vacules", each containing bee venom representing ten stings. To this powder we added 1 cc. of sterile distilled water, thus giving ten bee stings per cubic centimeter. * * * * *

There is great variation in the reaction or sensitivity to the venom and most arthritics, especially those of long standing, seem to have a much higher immunity to it than do normal persons. Since presenting this paper we have had a case with such marked sensitivity to the venom that three

stings divided over both elbows, one knee and one ankle produced astounding edema and ecchymosis over these joints until the skin appeared about to burst. This was also accompanied by intense pain and aching. The ecchymotic areas were approximately six inches in diameter. This severe reaction occurred three times on the same dosage. However, in spite of the severe reaction, improvement in her condition was quite unusual even in the fingers and other small joints. Inquiry revealed the fact that her father and mother had been extremely sensitive to bee stings but that she, herself, had never been stung by a bee. The reaction in such cases reaches its peak about three days after the injection and appears to be more marked and over a larger area when the venom is introduced intradermally rather than in the deeper layers of the skin. • • • •

An explanation of why there is marked improvement in the general condition and feeling of well being may be found in the following: It has been definitely established that a low sugar tolerance is common in arthritic individuals, and that a rapid sedimentation rate is nearly always present, especially in the atrophic type. According to Pemberton 76% of all arthritics show a low sugar tolerance, however, he states that "A study of the mechanism of this phenomenon reveals that it is not due to a difficulty of carbohydrate combustion per se, but to those tissues where these processes of physiology originate, the normal quota of blood usually allowed them in unit time." Therefore, he believes, in this condition, the term,"delayed sugar removal" is more appropriate than "low sugar tolerance."

It would seem that this assumption is correct in view of the fact that there is marked improvement in the sugar level in most of the severe cases after several injections of bee venom, and it can hardly be supposed that the venom changes the sugar metabolism, but rather mechanically facilitates its removal.

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BEES LIVE IN ATTIC

By O. O. Chilton

Four years ago Mr. Albert James, Wayne County, Missouri, bought five stands of bees and placed them in his back yard. His small son got stung a few times, so Mr. James decided to put the bees where children would not be in danger. He moved them to the attic of his house. They were placed near a window, and the floor of the hive set on a level with the window sill. The windows were then raised and a small chute built from the opening of each hive to the outside of the window. The windows were then let down on the chutes. This permitted the bees to enter the hives through the chutes, and permitted the windows to be let down so as to exclude rain and cold. In the four years the bees have been in the attic there has been no winter loss. The swarms come through the winter in fine condition and produce a lot of honey to sell.

Leeper, Mo.

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HIVING SWARMS

By Geo. H. Foote

Just try hiving a swarm of bees with a large funnel about fifteen inches across and a foot deep attached to some 2½-inch eave spouting. Set the hive on the ground under the bees with something soft for them to fall on, then place the funnel under the cluster. Give a quick push upward and the job is practically done. If the bees never do anything invariably, they must do so this time for they certainly climb into that hive.

Use the spouting in the sections to fit a distance from the swarm to the front of the hive. I never pass up a stray swarm that has hung close to the ground for a day or more. I often give it a frame of eggs or small larva. The bees often build queen cells and this is a good way to start them.

I had one colony that even killed their queen and went ahead with the cells.

Grand Rapids, Ohio

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SECOND GLANCES

By C. M. Isaacson

It is always true that there are two sides to every question. This applies to the much discussed War Production Order M-118, whose original purpose was to protect the ordinary consumer. But, as Mr. Allen Root points out (page 329), if it results in depressing the honey market, as could easily happen if it is carried out unwisely, it may result in actually less honey for the consumer in the long run. Both in his interest and that of the beekeeper, it is to be hoped that certain amendments suggested are actually put in force. Beekeepers' organizations everywhere are doing a valuable work towards this end.

It will be of real interest to read further reports on the relative **honey production** of winter packed versus unpacked colonies (page 331). As Editor Deyell says, that is the real test; results, in relation to both labor and cost. The results this spring on a like experiment in my own apiary were not the same, but due to too few colonies involved and an unusually mild winter, were inconclusive.

Mr. Louzecky's article (page 332) might well be summed up in a few words—"too little spent is poor economy". **Plenty** is the keynote in beekeeping; plenty of food, room, bees, and equipment, all are essential to a successful season. And good equipment means both satisfaction and profit.

If a man is "known by his friends", E. R. Root is certainly one of our outstanding figures. To those of us who do not have the good fortune to know him personally, the results of his constant work are enough. We all join in wishing him many more years of happiness and service.

The automatic requeening feature of the manipulations described by Mr. Coggshall would seem to be almost the most valuable feature, coupled as it is with swarm control (page 336). But I still do not like the use of carbolic acid in honey removal, though I admit its wide use.

Any work which might help to clear up the vexing problem of queen supersedure is of especial worth (page 339). A. R. Mallory gives us a report of careful and painstaking work, and the data he has assembled should be studied carefully. The suggested use of emerging brood to check supersedure in packages should be of value in many apiaries.

Mrs. Nielsen is certainly correct in saying that we are fortunate in having as wholesome a sweet as honey at our disposal (page 342). Oftentimes beekeepers take their product too much as a matter of course, and do not realize what a remarkable work the bees have accomplished.

"You can't keep a good man down," the old saying says. Judging by that, the filtering of honey must have its definite advantages—it keeps coming up for discussion time after time (some probably would reverse the above, with a quote about the "bad penny") A careful operator doubtless can produce a sparkling product through filtering, but does honey need to be made into a syrup appearing sweet? In any case, Mr. Gardner's admonition against scorching in any way is always wise counsel (page 345).

Evidently Mr. Toth, as "Protector of the Bees" at St. Mary's College, knows his business very well—a 400-lb. average is certain testimony to that (page 346). And the description of his office shows his real interest in his work.

The June issue should be placed where it is convenient for easy reference to the table on brood diseases (page 348). It is a concise and plainly made out form to enable one to diagnose any suspicious dead brood.

The item and pictures on page 349 bear the heading, "A Sideline Beekeeper". Many of us would hardly consider handling 175 colonies as exactly a sideline—which is all the more a compliment to Mr. Barr's ability.

Methods for producing more beeswax are of real importance nowdays, as the item on page 360 says. Some of the suggestions (editorial, page 353) might well be worth trying this summer, as well as saving every scrap normally produced.

The various methods for swarm control bring the conclusion that all have their merits under different conditions. They all contain good advice, but we should remember to adapt it to our own particular need—don't put entire dependence on any one method. Just as an instance, plenty of room is a wise precaution, but will it help in a near dearth of nectar, with bees almost starving, but **still bound to swarm?** Read the Symposium carefully (page 361), and glean the points most usable to your requirements from each method.

And finally, don't forget the American Honey Institute. Send in a contribution or a pledge now, their constant work in our behalf toward the publicizing of honey will well repay you throughout the year.

Middle River, Minnesota.

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IT IS A WONDER THAT HE LIVED TO TELL OF IT

By Chas. C. McCash

Last week I fell from a tree with a swarm of bees and was stung from 500 to 2000 times. Eight doctors and many more who saw my body estimated as high as 5000 stings. I was packed in ice for four days and am now back with my bees. This is my hobby. I have twenty hives and hope to be in the business some day.

Fort Worth, Texas.

L. L. Langstroth, a year before he died. At the time he was visiting my father after he explained when, where, and how he discovered the bee space. I said to him, "Why can't I get a picture of you in front of the buildings that were the outgrowth of your invention, the moveable frame?" He consented and here is the picture taken 48 years ago.

Rummaging around among old photographs, looking for something else, I found an old picture that I took of Mr. Langstroth in 1894, the year before he died, showing him in front of the buildings that were the outgrowth of his invention. The plant at the time was less than half the present size but enough to give him and the bee world the beginnings that brought about a revolution in all bee culture throughout the globe. The reproduction of this old picture taken in 1894 is particularly appropriate to follow the mention of the book, "The Life of Langstroth," as given on page 365 of the June issue.

Fortunate I was that I could sit at the feet of this Gamaliel so many times and hear his eloquent description of the conditions that brought about the discovery of the bee space that made beekeeping commercially possible all over the world. While others, (Gleanings 1940, page 624) discovered that frames or combs could be spaced distances apart, it took a Langstroth to see that the correct distance was approximately

(Continued on page 445)

American Honey Institute News Notes

Since 1928 the Institute, located at Madison, Wis., has been devoted to advancing the use of honey.

A new leaflet entitled "Use Honey in Canning and Preserving" is now ready for distribution. This is an up-to-the-minute, 8-page folder and should be widely distributed during the canning season. Many recipes are given in the leaflet, as well as rules for canning and preserving with honey. A sample leaflet will be mailed upon request.

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If you did not receive a copy of **"Institute Inklings"** and desire one or more copies, just drop a line to the American Honey Institute and we will see that they are sent to you promptly.

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Collier's Magazine has issued a 34-page, file-size booklet, entitled "Sugar-Savers". This booklet devotes the first section to honey recipes.

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The Augusta, Georgia, Chronicle has issued a magazine supplement to their paper entitled "War-Time Cake and Cookie Book," in which is included a great number of recipes calling for the use of honey. This is a real service.

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A comparison in the sweetening value of honey with other products is given below:

One cup of refined white sugar is equal to ¾ to 1 cup of honey; 1 cup of brown sugar; 1 cup of maple sugar; 1 cup of maple sirup; 1½ cups of sorghum sirup or molasses; 1½ cups of cane sirup; 2 cups of corn sirup.

In the June issue of Country Gentleman in an article entitled "First Kitchen of the Land", there are two recipes among those published which call for honey. One is Honey Chocolate Sauce and the other Rhubarb and Orange Compote. Another chapter, entitled "Strawberry Festival", gives honey a prominent place. Practically all of the recipes call for honey. They are delicious too. You will be delighted to own a copy of the June issue of Country Gentleman.

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Honey is incorporated in many delicious combinations with pineapple in new releases put out by the Hawaiian Pineapple people.

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Practically every college in the country is issuing bulletins on honey in cooking. One of the recent ones is entitled "Sugar-Shy Recipes."

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In recipes for cakes and cookies that formerly called for sugar, try this rule: Replace each cup of sugar called for with ¼ cup sugar and ½ cup honey. Other ingredients remain the same.

Delicious strawberry shortcake may be sweetened with extracted honey instead of granulated sugar. Honey gives shortcake a wholesome flavor.

—From the Spry News Department, Lever Bros. Co., Cambridge, Mass.

Editorials

The Tribute to E. R. on his 80th birthday by his old friend, C. W. Hartman as given on page 335 last issue before he knew it, has called forth some beautiful letters of love and felicitations. Thank you, dear friends, one and all.—E. R.

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HONEY RESTRICTIVE ORDER M-118 AMENDMENT

The following telegram was received on June 19:

"War production Board today announced issuance of amended Order M-118, which regulates use of honey in manufacturing other products. Quota for industrial users during June is now 120 percent of quantity used during June, 1941, or 200 pounds. Beginning July, quotas are computed quarterly. 120 percent of use during corresponding quarter of 1941, or 600 pounds, which ever is larger. Users may apply to the War Production Board for additional special quotas in two cases, first, for making new honey product in which honey is not primarily a sugar substitute; second, for accelerating a use of large inventories accumulated before March 26 if they exceed six times the manufacturers' June quota. In addition dealers holding large inventories accumulated before March 26 may also apply by letter for authority to sell to users who may take honey as a special extra quota.

A. A. THOMSON,
Government Presiding Officer Honey Industry Advisory Committee,
War Production Board."

The original M-118 Honey Restrictive Order issued on March 26 limited old industrial consumers of honey during 1942 to 100% of the quantity sold monthly during 1941 and limited new industrial users who had not formerly used honey to 60 pounds per month. See Gleanings for June, page 329. Industrial users are those consumers who change honey by mixing it with other products in the manufacture of soft drinks, baking products, ice cream, etc. Neither the M-118 nor the amendment applies to the sale of honey for home use.

Under the amended order old industrial users will be permitted to use during June 120% of the quantity of honey used during June, 1941. New industrial users who did not use honey in June, 1941, will be permitted to use up to 200 lbs. for the month. Beginning July 1, the quota permitted all industrial users will be computed quarterly.

For July, August, and September the old industrial users will be permitted to use 120% of the honey used during July, August, and September, 1941. The new industrial users will be permitted to use a maximum of 600 pounds during this period.

The amendment also provides that special quotas will be permitted individual industrial users to take care of special cases. Where honey is being used in a new product, not primarily as a sugar substitute an industrial user may ask for a quota greater than 120%, or if he is a new user he may ask for an amount of honey in excess of 200 pounds per month. Provision for an increased quota is made for individual industrial users who have a large stock of honey purchased prior to March 26. This provision should eliminate the necessity for any large industrial users from suddenly dumping their honey on the market.

Dealers or importers holding large stocks of honey accumulated prior to March 26 may also get permission to sell honey to users who may take honey in quantities greater than the normal quota.

These changes in the Order should greatly minimize if not entirely eliminate the danger of distressed stocks of honey coming back on to the market at the very time the new crop is being sold.

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The Orthodoxy of The Double Brood Chamber Colony

For both summer and winter the double brood chamber colony is no longer a question but accepted as correct by the rank and file of successful honey producers over the country. Nearly fifty years ago the writer visited the Dadants and among the pleasant and profitable memories is a talk he had with the Senior Charles Dadant, the pioneer of the Dadant family. He was among the first to recognize the value of very strong colonies. The ordinary 10-frame Langstroth hive, single story, he held was not adequate to hold such a colony so he adopted the Quinby frame. The writer was so impressed with what Mr. Dadant, Sr., had to say that he came home and began breeding in two-story Langstroth hives rather than a single-story. Almost immediately thereafter the crops of honey from

our experimental apiaries increased. We had better wintering.

If you wish to know something about this, consult the volumes of this journal from 1894 to 1901. We met with opposition almost at the start, even from as good a man as Dr. C. C. Miller, but we stuck to the double brood chamber despite the general trend toward the Heddon principle of a divisible brood chamber hive, single story.

In later years Dr. Miller became an advocate of the double brood chamber, and it was George S. Demuth who developed the idea of a double brood chamber **the year around** or what he subsequently called a food chamber or an extra story on top of a colony. The tendency now is going farther, that is, using three stories, and not only that, but there is a slight tendency toward two queens to the colony. The larger the colony, it can be said, the larger the relative yield per thousand bees.

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The production of beeswax, of which there is likely to be a shortage before the season is over, is urged by government officials. The Navy has recently asked for bids of 60,000 pounds of beeswax, and it may require as much as 500,000 pounds annually. In producing wax there will be little or no loss of extracted honey produced if combs are spaced wide, eight or nine to a ten-frame super. No one seems to know exactly how much wax is secreted involuntarily, but if bees need to build out their combs, wax will be secreted and when the combs are uncapped, honey and cappings go down into the capping box and a much larger proportion of wax will be secured if the combs are spaced eight or nine to the super. (See page 441.)

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Living From Hand to Mouth By the time this reaches our readers in July, the honey flow will, we hope, be on in full force. At present, June 9, many colonies have eaten up practically all their stores, even colonies that were well supplied with honey earlier. The early spring which encouraged heavy brood-rearing resulted in hives boiling over with bees. The dearth of nectar which usually precedes the clover flow has been longer than usual and this has resulted in the disappearance of honey — practically down to the vanishing point. We hope beekeepers may find it possible to save their bees for if ever they are needed it is this year.

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Corn Syrup, Corn Sugar, or Dextrose Whatever name we may call it, since the rationing of cane or beet sugar, it is now being used to a considerable extent in candies, soft drinks and ice cream. Many of the attractive candies on the market consist of a center of what is probably dextrose, dextrin and malt sugar, and a coating of cane or beet sugar. This coating of granulated sugar, of course, has a tendency to bring up the sweetness of the product.

In this connection, we have learned that there are two general forms of corn syrup on the market. One, the old type, made by the action of acids upon the grain, and the new type, made by the action of enzymes. Whatever may be its exact function, the new type is sweeter, according to the news print, than the old by the ratio of 51% to 28%.

Corn syrup or dextrose has been rated all the way from 48 to 66% as sweet as sucrose or what we commonly call granulated sugar. Browne, then head of the Bureau of Chemistry, put it at 48%, and Willaman put it at 74%. Of course, it should be understood that corn syrup contains about 25% water and therefore it is less sweet than the straight dextrose.

There are a great many so called cola drinks now on the market. Corn sugar or corn syrup, less sweet, and used for the purpose, has to be reenforced by a cane sugar or honey. The use of the latter is partially restricted by Order M-118.

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Natural Supersedure Prevalent this Season It would seem that each human being is endowed with his or her allotted amount of energy and is capable of performing a certain amount of labor. Some humans "burn the candle at both ends," and die prematurely. Others conserve their energy and live out their allotted time.

Queen bees with a normal environment are capable of performing a certain amount of labor in egg laying. Some queens heading colonies in hives with large brood chambers which afford unlimited comb space for egg laying, may burn themselves out in a relatively short time, while other queens with similar potentiali-

ties occupying small brood chamber hives (as, for example, the single story eight-frame hive), may live longer (while doing the same amount of work) than queens in larger hives.

During the days of small brood chambers in the comb honey era when queens were more restricted in egg laying, they lived longer than at present in large brood chambers devoted to the production of extracted honey. The value of a queen should be based on the quantity of eggs she lays and not on the length of time she lives.

Since beekeepers are learning to reserve an ample amount of stores for bees and to provide ample comb space for brood-rearing, many populous colonies are found quite early in the spring. Heavy brood-rearing began about two weeks earlier than normal in this area during the past spring. On March 20 we found one populous colony with brood in four combs. Just one month later, April 20, this colony had brood in thirteen combs.

This heavy brood-rearing has resulted in a terrific strain on queens. In fact, a percentage of queens that appeared normal and prolific early this spring are now (June 8) being superseded. From reports received it would appear that this condition is quite general.

Failing queens, when found, should be replaced with young laying ones.

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The General Maximum Price Order The General Maximum Price Order as interpreted by OPA, includes extracted honey. Comb honey is not covered by the Order.

When a price ceiling was discussed before this order was put out there was a feeling that a certain definite price figure for producers would be named but apparently the Office of Price Administration felt this was impractical because of the variety of honeys and the different market price levels in different parts of the country. Without doubt another reason that action on a producer price ceiling was deferred was that the General Maximum Price Order was anticipated.

For most commodities the General Maximum Price Order is not difficult to apply but in the case of a product, such as honey, where the price had been changing very rapidly during the March base period, retail, wholesale, and producer prices had not come to equilibrium. In some stores a retail ceiling price on honey is based on March producers' prices while in others the retail price is based on December producer price. This resulted in a great spread in the retail price between the two.

Fear has been expressed by many producers that the low priced retailers will force the higher price retailers to sell honey at the low level which in turn would squeeze the producer price to a pre-March figure. In our opinion the determining factors are these: Will there be a greater demand than the supply of honey will care for during the next few months? What percentage of all retailers have a retail ceiling price based on a pre-March producer price? If the demand is greater than the supply the higher priced retailers will be able to sell honey despite lower priced competition in the same area.

If a large proportion of the retailers over the country have adjusted their retail prices during March based on the March producer price level the beekeepers will have little to fear. On the other hand, if few retailers during March adjusted their retail prices to the March producer level then beekeeper prices will undoubtedly be squeezed downward.

While the Office of Price Administration is very much opposed to raising any retail prices, the General Maximum Price Regulations provide for adjustment of retail prices for individual retailers who find that the maximum price for a particular product is abnormally low in relation to the maximum prices for the same or similar commodities established by other sellers. Individual retailers may file an application for adjustment of this retail price. Also adjustment may be made where the retailer finds that not only his maximum price but the maximum price of other retailers are so low in relation to the maximum prices established for the wholesalers or producers that an undue hardship would be worked in his case.

See section 18 of the General Maximum Price Regulations and also part No. 1300 Title "Procedural Regulation No. 1."

Production of honey will not be sufficiently stimulated by prices lower than parity. It is hoped that when the smoke clears away producers will continue to obtain a price in line with other farm crops. (See p. 429.)

Spinster Jane Says

A gentle rain is falling, after a day and a night of excessive heat, and bees will be doing their bit, during this lull in nectar-gathering, in producing beeswax. We hope it doesn't develop into a rainy spell, as nectar is none too plentiful yet, alsike just beginning to come into bloom. Besides, bees are apt to be ill-tempered when rain washes out much of that nectar. They feel just as women do who prepare for a day's outing, picking berries, when they see rain come pouring down to spoil it all.

Boy took time off to go through his hives thoroughly. Our small colony is doing fine, has a prolific queen, is full of brood and eggs, and to encourage it a bit, he gave it three frames of sealed brood from a hive with twelve such frames. He instructed me to feed it well as it had too few to bring in much food.

And right next that small colony was a very populous, very bad-tempered one. They were just plain ugly, an epithet I do hate to apply to females usually so good-natured.

In spite of my advice, Boy scorned bee-veil and gloves, working with his sleeves rolled up, his face quite unprotected. I perched on a rock just back of the hives to watch the entire proceedings, very much interested in what that inner mystery would reveal.

Reaching this hive, Boy puffed smoke in the entrance, took off the cover and peeled back the inner quilt slowly and carefully, puffing more smoke across the frames, when biff! bang! Those bees attacked, their angry buzz saying they meant business, and would put up with no intruder.

Boy was stung on an eye, also several places on his hands and arms. Of course, he came to me to have me pull out the stinger, and so did the bees come. I didn't have my glasses so could not see, and was forced to beat an ignominious retreat, the bees in full chase. Of course, I came back when they had quieted down. I was too interested to miss seeing one queen. Some did elude us, though, but the presence of eggs and brood told us there was a good queen belonging there.

Everything is now ship-shape in the home yard. All queens are clipped, all were given extra supers, all queen cells and much drone-brood were cut out. Some fine queen-cells were kept, and we are raising a couple of these royal ladies from extra quiet hives.

The queen in that ugly colony must go. Like begets like, and we want good, even-tempered queen-mothers to insure quiet bees.

Boy developed a beautiful "shiner" from that stung eye. It turned the usual variety of colors, and he felt that it was a bad advertisemnet for a beekeeper. Crazy boy! A veil would have saved all that, but it is just like a man to be stubborn.

The twenty-five four-pound packages arrived from a southern state—Georgia I think,—and they surely stirred up quite a bit of excitement in the city. Merchants, business men, and citizens crowded around to see the bees and to ask questions. It was surely fine publicity for the honey producers, and Boy's eye was an ad for their stinging powers as well.

One lot of ten of these packages has found a summer home on the farm of a Chinese market-gardener, Hop Sang by name. He was easily persuaded that bees would greatly help him in his work, especially in small fruit production. On being shown a queen, he asked to see the king, and was quite surprised that the hive had none. Yes, the Chinese are useful allies even in producing honey.

Another ten packages found a home on a Finlander's farm, and tell me why foreigners are more anxious for the bees than are our own Canadian people? Do they know more about the benefits derived from bees when kept in their own countries, or are we as Canadians lacking in this knowledge, taken by and large? I wonder.

The remaining five are perhaps too close to the big smelters. We fear the sulphur fumes may harm them, but a short time will tell if they have to be moved further away.

And now the stage is all set for "Honey Production." Summer will soon ring up the curtain, and we hope Nature's various 1942 elements may play their part in making it a huge success, not a flop.—Spinster Jane.

A Symposium

on Swarm Control and Methods of Supering

Conducted by the Editors

(Conclusion)

[It may seem rather late in the season to continue this discussion, because swarming, as a rule, occurs during May and June in most of the clover region. However, in the northernmost part of this region swarms may issue in July. A few years ago we talked with a commercial beekeeper in one of the counties of Minnesota, just south of Manitoba, who said he usually has swarming in August.

Most of the contributors to this month's Symposium, as will be noted, stress swarm control rather than methods of supering.

Our first contributor is Bruce L. Morehouse, Montevideo, Minn., who keeps bees in a state where swarming is a real problem.—Ed.]

SWARM CONTROL AND SUPERING

By Bruce L. Morehouse

This year a beekeeper with a number of outyards should so manage his bees to lessen necessary visits, as a matter of efficiency, expense, and a saving on tires and gasoline.

With us, determining what to do next to a colony depends upon several guideposts. First is the colony history as shown by the 4x6 record card thumbtacked to the inner cover. Secondly, the state of the colony by examination. Then, there is the probable immediate future according to the season, and any factors, such as drouth to be considered. Also, comes the important precaution, from April to July, of how best to keep the colony strong and at the same time prevent swarming. With these considerations we make our decision after the hive is opened. Many times we change our contemplated procedure by some observation during the hive examination. Then, we hope that we did the right thing oftener than the wrong thing.

The degree of swarm control we may have is the result of three operations. First, by dividing strong colonies to make up winter losses, or for reuniting later; or merely supplying more super room, if possible slightly ahead of colony needs; or, if the swarm fever grips the hive, by Demareeing.

As a swarm preventive, we sometimes divide a strong colony, placing about half the brood above a top-bottom*, with a ripe queen cell or southern queen. Soon we have two strong colonies, one above the other. Various manipulations are then possible. Both may be run "as is" until packing time; one may be set off to strengthen the other; or they may be united.

Supers are tools to lessen swarming, especially during May and June. Early in this period a super placed over the food chamber affords expansion room to allow the colony normal growth. But should weather or other things interfere and so allow the colonies to build up faster than attended to, an empty super may be placed between the brood body and the food chamber. Or, if swarming is imminent, a division or a dose of Demaree is administered. Later on, when colonies are working nicely, without swarming tendencies, top supering is employed. So, we find that pre-conceived ideas of treating all colonies alike in manipulations are subject to considerable revision when individual colony conditions are faced when the hive is opened.

*A top-bottom is an inner cover with an extra rim, serving as top for one colony and bottom for the top colony. Sometimes the escape hole is covered with screening, sometimes a board.

[Mr. Morehouse is right; each colony is likely to require somewhat different treatment than the adjoining colony. We should not work by rote when checking an apiary. —Ed.]

[Next we hear from John W. Holzberlein, Jr., of Colorado, who experiences beekeeping conditions somewhat different from those found in the East or middle West. —Ed.]

SWARM CONTROL

By John W. Holzberlein, Jr.

We practice swarm control only as a curative measure. What we really try to practice is swarm prevention. By "swarm prevention" I mean the elimination of those factors that make a colony want to swarm. Of course, this is not always possible for some factors enter into the situation that are out of the control of the beekeeper.

According to my observations the swarming impulse seems to be begun by one thing, the rather sudden cessation of egg laying by the queen. This causes the building of cells, and if conditions are right, swarming. The queen may stop egg laying for a number of reasons. I will try to set forth the three more important ones. (1) She has no room. (2) Pollen has stopped coming in. (3) She may have been near the end of her career when she began the big spring production drive, and need a rest.

Let me take up these reasons, one at a time:

First, the matter of room. We have long heard the phrase, "plenty of room", but we are woefully short on our understanding of its meaning. It, no doubt, has many meanings. A colony no longer has plenty of room in my estimation unless it has some unoccupied comb space both above and below the brood nest. To accomplish this we give our two-story-wintered colonies two more hives of combs as soon as the weather is warm enough and the colony is strong enough to take care of them (and quite a while before they really need them,—for if you wait till then you are apt to be too late). "Plenty of room" should also mean room to get into and out of the hive, and elbow room between the combs in the brood nest. One example of a lack of this elbow room is a brood-nest congested by drones. Good worker comb is in itself good insurance against swarming. Sudden honey flows may congest the brood-nests with new nectar, stopping the queen from laying, and unless relief is soon given, cause the building of cells and swarming. However, a good steady honey flow with accompanying pollen does not of itself cause swarming.

Second, the importance of pollen. For some years I have noted colonies wanting to swarm when, to me, the reason was not apparent. They had young queens and they were not crowded. It took Frank Todd of the Bee Culture Field Laboratory at Davis, California, to point out to me the importance of pollen in these situations. For example, a colony has been going strong and is well on the way to its queen's maximum in egg production when all of a sudden pollen stops coming in. It may be a rainy spell of weather; it may be the pollen source has ceased to exist due to the end of the blooming period for certain plants. Nothing is in sight to feed the brood; no eggs; cells started; and if the condition prevails, swarming occurs. Of course, if the condition is changed in time, if it stops raining, or if another source of pollen becomes available,—and other conditions do not promote swarming, the cells will be torn down and the colony will resume brood production. We have all observed this many times — but did we know why? Here's where the extra room below the brood nest proves valuable. It is natural for bees to store a surplus of pollen below the brood. This extra pollen stored during the abundance of early spring blooming helps tide the bees over the dearth of pollen that so often occurs between spring sources and the main flow. We find here that it is during this gap that swarming preparations are often made.

Third, Queens. All know the tendency for a colony headed by a queen of over a year's age to want to swarm. Older queens do not even need all the other incentives. And, of course, swarming is the natural method of perpetuation and increase, therefore during a season of plenty this reproduction urge will be stronger and colonies will have to be curbed from their natural course. It is, of course, a recognized fact that some races and some strains seem to have this reproductive urge above all others.

When the above-mentioned swarm prevention methods fail, and all rules in beekeeping do, then we practice genuine swarm control. We do this by cutting out the queen cells where only open cells are found and reversing the hive bodies of the double brood chamber. This often ends the desire to swarm. If it does not, it at least gives ten days in which conditions may change. If sealed cells are found while the colony has ample room and other colonies of like strength are not wanting to swarm, it would then appear that the queen

is at fault. In this case we kill her and all the cells. In eight to ten days we again kill the cells and give a young laying queen on a couple of frames of brood where she has been laying. (We try to keep some young queens available in each yard during our swarming season.) That colony is then good for the rest of the season without a setback. Controlling swarming without loss of colony morale is the delicate matter.

We plan to keep all of last season's queens clipped. Sometimes they get to the stage of swarming before we get to a yard. Where this happens the old queen is usually lost and the swarm returns. In this case we kill all the cells and give a young queen as before. If no young queen is available we leave one, only one, sealed cell. Of course, these last are only emergency practices and are followed only as a last resort, for, as was stated at the beginning, an ounce of swarm prevention beats pounds of swarm control.

[In Mr. Holzberlein's article he mentions reversing the hive bodies of the double brood chamber, which manipulation he refers to as a genuine swarm-control measure. We know some good beekeepers who practice this but we have never done it, mainly because our bottom brood chambers are stapled to the bottom boards. We have, however, wondered about the possible merits or demerits of this practice.—Ed.]

[And now we hear from Grant D. Morse, of Saugerties, N. Y., who, in reality is "from the central part of Missouri," when it comes to being shown that the reversing method actually has merit.—Ed.]

DOES THE REVERSING METHOD HELP PREVENT SWARMING?

Are the Followers of This Practice Doing So Because They Know It Helps Prevent Swarming or Do They Merely Think It Helps?

By Grant D. Morse

In recent bee literature, particularly the May issue of "Gleanings", I note considerable mention of reversing hive bodies in order to obviate swarming. The advocates of this practice are beekeepers who employ two hive bodies as a brood chamber and still, evidently, have trouble with swarming.

I want to raise three questions about this practice: (1) Does it actually obviate swarming? (2) Does it contribute to increased honey production? (3) Is there anything logical about the procedure?

Let us turn our attention to the first question: Does this method actually obviate swarming? Frankly, I don't know. I wonder whether those who follow the practice of reversing hive bodies really know whether it reduces the swarming tendency? I don't see how anyone could answer the question reliably unless he carried on a controlled experiment, that is, used this method with a reasonably large number of colonies and avoided its use with an equal number of comparable colonies meanwhile treating them alike in all other respects. Few beekeepers do this. Instead they follow a practice they believe is correct and conclude that this or that manipulation has its positive part in producing the achieved result. Actually it may be a deterrent rather than a positively contributing factor.

The second question raised here is: Does this method contribute to increased honey production? As with question number one, the way to find out is to carry on a controlled experiment, that is, follow the method with part of one's colonies. Here again, I'm frank to say I don't know the answer. I wonder if others are sure about it?

Thirdly, I raise the question: Is there anything logical about the procedure? Beekeepers who follow the practice of reversing the two chambers of the brood nest do so, they say, on the theory that the queen lays her eggs by preference in the topmost cells in the hive. Are there not several good reasons for her doing so under normal conditions? Is it good policy to try to thwart her following this instinctive impulse in the natural way? Is it clearly demonstrated that she will not work downward in her egg laying path as fast as desirable? Why is most of the pollen supply stored in the lower brood chamber? Is not the presence of a host of young hatching bees in the lower hive body an obstacle to the orderly carrying on of the bees' work and a major contributing factor to swarming? Is it not better to have the honey adjacent to the eggs (and the lower hive body of a two chamber colony seldom contains much honey)? Are not the topmost cells filled with eggs first because the queen instinctively knows the desired colony temperature can be better maintained if this is done?

These are some of the questions that occur to me when I consider the merits of this practice of reversing hive bodies in a two-chamber colony. Of course, if someone definitely knows that it works, then the theo-

retical aspects referred to under my third question are not worth too much consideration. If, like myself, you don't definitely know, you will be interested in a brief examination of some of the questions I have raised about the wisdom of following the practice.

Is it good practice to try to thwart the queen in her tendency to follow the natural cycle in her egg laying? Why does she follow this cycle? Isn't the question of colony temperature involved for one thing? When you reverse the hive bodies don't you upset this equilibrium? Certainly to do so in localities where the nights are cool must give this result. Brood must be kept at a rather high temperature. It probably isn't easy for a colony to do this when the lower hive body, largely or entirely void of brood, is raised above the frames containing the brood.

Do we definitely know that a queen worth thwarting in the contribution she normally would make to swarming will not work downward in the brood nest as far and as widely as she needs to? And do we know that when the hive bodies are reversed she will as a consequence put a greater number of eggs into the cells of the colony than she would put there if undisturbed? To be sure, we know she will work in the upper hive body rather soon if the two are reversed, but that does not answer the question.

Why is most of the pollen supply normally placed by the workers into the cells of the lower rather than the upper hive body? Isn't it because they want it where it won't be in the way of the queen when she lays her eggs, and also will be where they can get it to carry to the emerging brood during a spell of unfavorable weather or during a period of dearth?

Is not the presence of young hatching bees in the lower hive body a contributing factor to the swarming impulse rather than a deterrent? Certainly it would seem they would be in the way there more than if located higher up in the nest. Authorities have long considered the presence of a host of young bees to be one of the prime causes of swarming. The Demaree method is employed to obviate that condition. Demareeing doesn't eliminate young bees from the colony; it merely removes them from the immediate presence of the queen and her workers.

Is it not better to have the dwindling honey supply adjacent to the young brood? This is seldom accomplished by reversing.

Perhaps the men who practice the reversing method know what they're doing but I'm not sure of it. I'd like to be convinced though because if it is a correct procedure it's an easy one and requires little time.

(Reversing or interchanging of the two hive bodies without use of an excluder would be of doubtful value. But the plan of Demareeing as explained in this issue, page 431, is no experiment. Many beekeepers use it.—Ed.)

"DOGHOUSE" BEE HIVES IN VERMONT

"Dog-house" bee hives, a type that has been common for many years in much of the colder North. Within the massive outer shell is contained a conventional hive and supers, the portion around the lower brood-nest being permanently packed. The view shows part of the 285-colony home apiary of E. J. LaBombard, at Vergennes, Vt. (See photo, page 496, Gleanings, August, '41.) All of Vermont's commercial beekeeping is conducted with hives of this arrangement. —Photo by John Conner.

From North, East, West and South

SOUTHERN CALIFORNIA, June 1.

Weather: Spasmodic might be applied to the weather temperatures during May throughout southern California. Following a fishing stream on May 1st, opening day of the trout season, in the San Jacinto Mountains at an elevation of 5000 feet we really suffered from the cold. Until the 20th of the month the weather remained quite cool, in fact, too cool for bees to work satisfactorily, then bang, we had the hottest May day southern California had experienced in many years.

Since that time it has been cool, foggy at times, often cloudy over head. A few hours of sunshine almost every day but little to encourage the beekeeper in the way of a honey flow. No rain has fallen since our last letter and the season when we can look for rain is practically over for the year of 1942. The ground is getting very dry near the surface and it is only from the deeper rooted plants or the irrigated sections that we can hope for any nectar from now on.

Honey Crop: Orange honey is being extracted with varying reports of the yield per colony. If we were to venture a guess from the information we have we would say from 20 to 40 pounds per colony. Perhaps 20 pounds would be high enough if all colonies were counted that were moved to the groves.

Those locations farthest from the coast seemed to yield better than those nearer the ocean. Sage locations have yielded a little but many colonies are no heavier now than they were at the beginning of the bloom. Southern California seems destined for a short crop of honey in 1942.

Buyers have been around but they seem more interested in getting information as to the size of the crop than in making any offers or suggesting prices. Some beekeepers are talking 12 cents or better for the orange honey.

Miscellaneous: Beekeepers who moved to the orange have been busy moving their colonies back to their summer ranges. Many of them take off the full supers of honey, carry them to a central extracting plant and leave them until it is convenient to do the extracting. Most of them have a goodly supply of surplus combs and supers and can carry on this system very nicely. Most beekeepers are leaving colonies heavy with stores, feeling that it is better to play safe than to extract too closely and take any chances on their getting winter stores later on in the season.

Very little disease is reported. Most beekeepers act as their own inspectors and examine all colonies several times during the season and if any sign of disease occurs it is taken care of immediately.

A number of the larger producers are using paper cartons each to hold one 60 pound or five-gallon can. The cost is a little less than for the wood case holding two five-gallon cans and we think will be fully as satisfactory.

White sage and wild buckwheat will soon be blooming and with a little warmer weather we hope will give us some surplus honey.

Although we have heard of no forest fires this season nevertheless the danger time is with us. The grass is getting very dry and every precaution should be taken to protect our apiaries.

All beekeepers are urged to, and most of them have, cleared the grass and inflammable material from within and for a space of from 10 to 20 feet around their apiaries which makes them comparatively safe.—L. L. Andrews, Corona, California.

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PENNSYLVANIA, JUNE 7

Conditions: The early honey flow has been very spotted up to the first of June. In some sections of the State, feeding has been necessary while in others a surplus has been stored from fruit and wild flowers. April was warm and dry while May has been warm and very wet. This spring has been noted for extremes of weather. Two weeks ago, a cloudburst caused heavy damage in Wayne and neighboring counties while a hail storm ruined

crops in Perry County. The farmers in this section are buying buckwheat seed and are planning to plant large acreages of buckwheat to take the place of the crops that were destroyed. Bees will be necessary to insure a large set of grain. It is quite likely that some bees will be moved into this section to help pollinate the buckwheat and at the same time harvest the nectar from the blossoms.

Clover is very scarce but recent rains have improved the prospects for a clover flow. Ladina clover is being planted in large quantities and shows real promise for the beekeeping industry of this state. It shows a trend away from alfalfa which has been of little value to our beekeepers. Over 600 acres have been planted in one county of the state.

Markets: The markets continue active with the retail demand much above normal for this time of the year. Prices are remaining steady. Our beekeepers are, however, much concerned about the large quantities of honey that are frozen in the hands the commercial users. This honey could have a serious effect upon prices were it dumped on the market at a time when the new crop was harvested or when sugar restrictions were lifted. It is hoped that the recent visits to Washington of those representing the producers will result in a constructive program.

Miscellaneous: Losses were very small last winter. There seems to have been very little difference in the loss irregardless of how the bees were wintered. Both packed and unpacked colonies came through in good shape. The bees could fly until the first of January and the spring opened early so that the period of confinement was very short. It might be timely to review the summaries of the winter losses for the winter of 1940-'41 when they were considerably heavier. During that winter, the unpacked colonies died to the extent of 19%, while those that were packed and the ones provided with a top entrance (and bottom) but no packing, came through with practically the same per cent of loss, or 15%. There was, as can be seen, little difference in the averages for the different methods of wintering. The similarity was due to the fact that most of the colonies that died were lost because of starvation. They starved during the latter part of the winter and during the spring of 1941.—E. J. Anderson, State College, Pa.

TEXAS, June 2

Weather: The weather during May over much of Texas was very adverse to the bees. While there were 2.37 inches of rain it practically fell at one time so that the month as a whole was dry.

Crop Conditions: The mesquite flow which did so well in April ended with that month. Horsemint appeared as if it would give a fine crop but for some reason unknown the flowers did not open and very little horsemint honey has been reported. Due to cloudy, cool weather whereever pecans or hickories are numerous quantities of honeydew have been stored. In some localities reports say that a shallow super of honeydew has been taken. The bees themselves have done very well as from many minor honey plants in bloom they have made a living from the field. Colonies, however, lost heavily. Colonies on scale which at the end of the mesquite honey flow showed a weight of 190 pounds, at the end of the month showed a weight of 140 pounds. Another colony which showed 175 pounds now shows 135 pounds, the reason being that these colonies have continued to raise large amounts of brood which probably will never be used.

Prices: Beekeepers who have honey or beeswax are not certain as to what prices are and those who did not sell from the extractor are holding honey and beeswax awaiting some definite prices.

Miscellaneous: This part of Texas has been experiencing a peculiar swarming epidemic. This commenced the second week in May and is still going on. Colonies which are strong in young bees and have no queens will swarm without any queen, staying out sometimes for several hours and then return to the parent hive. Occasionally they will be accompanied by the old queens and if the swarm is not hived will disappear; however, in many cases the bees leave the new hive and go back to the parent one. Mating colonies are special offenders. They go out with the queen on her first flight and seldom return. These stray swarms have caused any amount of trouble in yards devoted to honey gathering as the stray swarm starts a series of robbing.

Reports from much of southwest Texas indicate that the first honey flow was good, however, at the first of June there in nothing definite as to what honey flows may be in prospect.—H. B. Parks, San Antonio, Tex.

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MINNESOTA, June 6.

Weather: And the rains came. The era of the dust bowl has ended with a vengence. For once Minnesota has had all the spring rain that any one could want, and much more than some wanted. Many records were broken. At the University Farm, St. Paul, the total precipitation for May was 14.87 inches, and within a 36-hour period the last part of the month the precipitation was a little better than 9 inches. This broke two records for 106 years. Minnesota's 10,000 lakes are now well filled, some of them higher than they have been for the past 20 years or more.

The heavy rains and almost continuous cloudy weather, while giving an abundance of soil moisture, have not been an unmixed blessing. The bees were able to get very little from the fruit bloom and dandelion. As a consequence the need for spring feeding has been very heavy. Many colonies have been on the verge of starvation. In some respects it has been a difficult time for package bees, especially early packages. A number of beekeepers report that packages installed near the middle of May are better than those installed a month earlier. Where overwintered colonies had an abundance of stores of honey and pollen they have built up rapidly, and some swarming has been reported in late May and early June. Fair weather is needed badly both for beekeepers and for the farmers, many of whom have not been able to put in their spring crops, but up to June 5 the weather man continues to predict monotonously "Not much change."

Crop Prospect:. Honey plants are in excellent condition. Both white Dutch clover and sweet clover are making rapid growth and all plants are unusually large and succulent. With normal weather conditions during the summer the crop should be better than average. However, beekeepers know too well how rapidly conditions can change and how many factors enter into the making of a honey crop to venture any definite prediction so early in the season.

Honey Market: Honey is still moving well although there was a decided slump in the demand for awhile following the very rapid price advance in March and April. Apparently there is practically no honey left in the hands of the beekeepers and the new crop will come on to a market practically bare of old honey.

Miscellaneous: Minnesota beekeeper are taking more interest in organization than ever before and membership in the state association has grown correspondingly. A joint North Dakota-Minnesota meeting will be held at Detroit Lakes, Saturday, July 25, and it is hoped that many beekeepers from nearby states will meet with us.—Dr. M. C. Tanquary, St. Paul, Minn.

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OHIO, JUNE 1.

Weather: May has been a surprise month to all beekeepers in Ohio. We have had a large amount of rain and with it came some very cool days and nights. This abnormal rainfall will, beyond a doubt, prevent a midsummer drouth. In April we had some fine weather, and Central Ohio beekeepers secured a fine flow of nectar from dandelion and other spring plants. I am informed that a portion of the Northern part of the State was not so fortunate, as the cool, wet weather came at a time when dandelions were in bloom and bees could not secure the right amount of nectar and pollen. This will result in considerable feeding.

The latter part of May has been exceedingly warm. At this writing, the evening of June 1st, we are getting a nice rain which we trust will reduce the abnormal temperature.

Condition of Bees: Early this spring bees were generally exceptionally strong. Winter losses were light, and by the middle of April many colonies were much too strong for that time of year. Even with our successful dandelion flow of nectar and pollen in Central Ohio we were compelled to do some feeding in some yards before the clover flow started. Pollen was dangerously scarce on May 25th and many colonies had begun to taper off on brood-rearing. Dutch white, alsike, and yellow sweet are now producing nectar in this vicinity in small quantities. Very soon the flow will be on in fine shape.

Miscellaneous: We are hopeful that the market price for honey this coming season will not be too low for the welfare of the producer and not too high for the consumer. We must be fair with the consumer. We should adopt a slogan—"A good product at a fair price."

Ohio and Michigan beekeepers have started an organization which we trust will become nation-wide within the next year or so. We have had two very interesting organizational meetings with more to follow, and I sincerely trust that all beekeepers who were not fortunate enough to be at our meetings will make inquiry of their neighbor beekeepers and get the interesting points. Just remember —"In unity there is strength." The rationing order M-118 put over in Washington without the knowledge of the producers lays bare the fact that the beekeepers have neither strength nor unity.

Each colony of bees is better organized than their owners. Take a lesson from your bees—ORGANIZE. Don't be a drone. Turn in and help. be a worker.—W. A. Coulter, Columbus, Ohio.

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VIRGINIA, June 8

The Weather: The weather here in Virginia was very favorable for spring management of bees. And in most cases where stores were sufficient, colonies built up in time for the early flow. Everything might have been just fine if it had not rained for several days while the tulip poplar and locust flow was on. Then cool, cloudy weather followed, which caused the bees to gather much less honey than was expected. Only a few sections of Virginia got a real good spring flow.

Condition of Bees: Bees are in fine shape for the summer flow. In some sections it has already begun. In the Piedmont section, sourwood will start blooming in a few days. Swarming has been light up until now, but when these summer honey flows start I expect many swarms if something is not done to prevent them.

Honey Market: A small quantity of new honey has already reached the market, most of which is section comb raised by small producers. The demand is good with the price slightly higher than the old crop sold for this spring. Most large beekeepers have large orders to fill as soon as the new crop can be removed from the hives.

Miscellaneous: The prospect for the summer honey flow is not so good. Clover seems scarce. Perhaps the rains we are having now will improve this, however. Sourwood blooms do not look as good as last year, but this may be our bumper year. You can never guess what sourwood is going to do. I have seen the heaviest kind of bloom produce but little honey, and then again a light bloom will give us a good crop.

It now seems that the Virginia State Beekeepers' Association will not hold their usual summer picnic. This is sad news to all of us, but on account of the shortage of rubber and gas it has been thought best not to have it this year.—Henry W. Weatherford, Vernon Hill, Va.

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WISCONSIN, May 29.

At the time when this material was prepared Wisconsin beekeepers were facing a rather serious situation because of lack of nectar. Many colonies of bees are likely to starve if some source of nectar does not develop within the next week, or sugar for feeding is not available.

The early spring was fine for brood-rearing and reports indicate that most of the colonies built up from fair to excellent. However, there has not been much nectar coming in lately which has left many colonies short of stores due to the early heavy brood-rearing.

Prospects for a crop are excellent because of an abundance of soil moisture. The State as a whole is short on moisture in the sub-soil but there is a good supply on the top soil at the present time. Alfalfa and the clovers are in fine condition and last year's seeding should be in prime condition by the time of the honey flow.—H. F. Wilson, Madison, Wisconsin.

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ONTARIO, JUNE 5

We have just returned home after attending a meeting of beekeepers in Victoria County. Mr. Townsend, our provincial apiarist, Mr. Shields, Manager of the Ont. Honey Producers' Co-Operative, and other well-known beekeep-

ers were present at this meeting, and we were able to get a comprehensive report as to the condition of the bees in Ontario and the general outlook for a crop.

Weather: An old saying tells us that "variety is the spice of life", and if this is true, Ontario has been well spiced this spring in so far as weather is concerned. In my notes for last issue, it is stated that April was the warmest and driest on record for our part of the Province, and now we can report that May was much cooler than normal and possibly the wettest May on record. Official figures have not been issued from the observatory at Toronto as yet, but private sources inform me that precipitation has broken all records. June has started out with three wet days out of the first five, and yesterday we had a fall of two inches in one hour.

Conditions of Bees: Three weeks ago we were wondering just how to handle the amber honey that we expected to be stored from fruit bloom and dandelion, for be it remembered that we had two weeks of summer weather in April during willow bloom, during which time the bees expanded their brood-nests at an amazing rate—they had wintered unusually well. Then the rains started and for three weeks hardly anything was gathered from the spring bloom, and now everything is a blank for at least another week. Stores were consumed rapidly by these very strong colonies jammed with brood in all stages, and many of them would have starved ere this if feeding had not been done. Mr. Townsend informed me that the office at Guelph had been besieged with requests for permits to buy sugar so I surmise that this condition is quite general in many parts of Ontario. One beekeeper who uses two full-depth stories exclusively for wintering, told me today that he was feeding heavily to avoid starvation, something very unusual he said, with this type of management, as their bees generally have abundance of stores.

Market: As there is little honey left in Ontario, naturally this in connection with the price ceiling for retail transactions, leaves little chance for a change in prices or marketing of honey. Mr. Shields, in his address today, stressed the abnormal situation existing at present, and said he felt sure that the Government would soon change the regulations so as to avoid the possibility of export business being lost and a drastic curtailment in the domestic use of honey. As matters stand now, no retailer, and this includes all producers, dares sell for more than the prices charged last year. But manufacturers can pay any price that they are willing to pay. The result is that firms dealing in ice cream, confectionery, soft drinks, etc., are out contracting for honey at prices at least two or three cents higher than any retailer could possibly pay and allow him a profit in selling.

Referring again to the condition that the bees are in, we do not remember a year when so few weak colonies were in evidence. We have at all apiaries some colonies that have queens being superseded—more, I think, than usual. But they are all strong in bees and brood, and there is not an average of one weak colony to an apiary in all our yards. This is unusual, but on the other hand, weak colonies do not appear to be the problem that they were forty or more years ago. We remember about Doolittle writing an article about uniting weak colonies in the early spring. He had eight weaklings, and he united them to four. Later the four were united to two, and then the two to one. So he had one weak colony instead of eight. Slightly exaggerated no doubt for a purpose, but the moral was good and its implications ideal. Reading in the last issue how Mr. Deyell shook young bees in front of a weakling to help it, reminded me of over fifty years ago, when in my grandfather's apiary of 150 colonies, I saw him do the same thing to save a good queen and build up the colony. He placed a wide board in front of the entrance of this weakling, running it back from the entrance two or more feet. He then found the queen of the strong colony chosen to spare the young bees, and carried the combs covered with bees to be shaken on this board two feet away from the entrance of the weak colony. All of the bees that were able to fly went back to their own stand and soon a procession of baby bees formed and marched up into the entrance of the weak colony. Of course, it works as that is the help needed instead of foolishly doing as often has been done—giving combs of brood to a weak colony that cannot care for the brood it already has.—J. L. Byer, Markham, Ontario.

THE GENERAL MAXIMUM PRICE ORDER

By Prof. J. E. Eckert

Following close on the heels of General Order M-118, the effect of the General Maximum Price Regulation (GMPR) tended to make beekeepers believe that their industry was restricted to the point where normal production was difficult and the desired increase in colonies and production next to impossible. Second considerations are usually better than snap judgments and this proved the case in this instance. Actually, the beekeeping industry is now in a very favorable position and beekeepers should and will do their utmost to increase colonies without going into debt and to increase production for the industry's contribution to the food production program.

GMPR states that all honey prices are fixed at the highest level of each seller reached in March, 1942, This means just what it says and the industry may rest assured on one point, the retail price of honey will go no higher during the duration unless there is a marked rise in the general commodity level. This in turn is practically fixed by the same regulation being applied to most all commodities we use, except labor.

Very few beekeepers sold honey in March and those who did, received prices that ranged between 10 and 15 cents per pound. A majority of the wholesalers and packers raised their prices in line with the rising wholesale price of honey. A few packers sold below the wholesale level, some unwittingly and others deliberately, in order to acquire new business because of lower prices. Those who sold below the wholesale level may be able to appeal and get some adjustment.

Beekeepers who did not sell honey in March will have to sell at the prices charged by the most competitive seller of the same class (or grade). Beekeepers know that their nearest competitors are their neighbor beekeepers. But an interpretation of the **most competitive seller** could mean any beekeeper who sold the same grade of honey to the same buyer or in the same market. Honey producers in California, for example, generally sell their honey to honey buyers who in turn sell to packers. These buyers are usually located in the larger markets, such as Los Angeles or San Francisco. Consequently, any honey producer in Southern California, who did not sell a given grade of honey in March, can sell his honey at the top price for which the same grade of honey was sold in March, providing he can find a buyer.

Honey is also sold by grade, that is, by certain U. S. standards based on weight, water content, clarity and flavor. Add to this the fact that buyers also consider color and one can readily see that the same floral source does not necessarily produce the same grade of honey in any two seasons. If a producer sold a honey that graded U. S. Fancy water white for 10 cents in March, say from black sage, he need not necessarily sell for the same price this summer if his sage honey falls into a higher or lower grade.

The retail price will be the ultimate gauge of what the producer will receive for his honey. Since most packers adjusted their prices with the increased wholesale prices in March, the producer should receive this year between 10 and 12 cents for the better table grades of honey. Some grades of honey sold at higher levels and these, orange blossom, sage and and tupelo—and possibly others of limited production—can and should bring the top price of all honeys.

A liberalization of the restrictions set by M-118 will relieve the present honey market of the pressure caused by the freezing of several million pounds of honey and should pave the way for new outlets for honey to take up increased production. The importation of honey from Mexico and other countries should not be used as a lever to beat down domestic prices as the amount that can thus be imported will be only a small percent of our total production. We also believe that amber honey and certain off-grade honeys, should be permitted unrestricted use for industrial purposes. These grades, as a rule,do not enter into competition with the table grades except for blending purposes to cheapen the better grades sold on the retail market. Beekeepers who reduce their wholesale prices to keep the price cutter in business are simply fostering a trade practice that has always reacted against the best interests of beekeeping.

During the present emergency,sales of honey below parity levels set by law will tend to defeat efforts for an increase in colonies in line with a general need for increased food production. (See editorial page 418.)

Asked and Answered

Dividing Two-story Hives

Question.—I have a few double-story colonies of bees and I am thinking of taking off the upper body and making another colony. They are well filled with bees and honey. Do you think it is advisable to do this?—Jonas S. Yoder, Ohio.

Answer.—It is perfectly possible to remove the upper brood chamber from your two-story colony, placing this upper chamber on a bottom board on the new location in the same apiary and of course giving it a cover. All of the old bees will return from the new location, to the old location but the young bees will stay in the hive that is set aside. If you leave the old queen in the hive on the old stand and introduce a new queen to the upper brood chamber that has been set on the new stand the queen is likely to be accepted quite readily. Should the weather be cool at the time you divide your colony it is well to place an entrance reducer in the hive on the new stand for a time at least in order that the bees in this hive may be better able to keep the temperature normal. As already stated, the old bees will leave this hive on the new location to return to the hive on the old location. If little nectar is coming in make sure the hive on the new location has plenty of food. It is preferable to divide populous colonies at the beginning of a honey flow.

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Effect of Metal on Wax

Question.—The editorial in November Gleanings, page 706, on wax contains the statement "Do not forget that copper or even iron kettles used in heating discolor wax." I would be interested to know on what basis copper is said to discolor wax. My own experience, based on advice from Floyd Markham, whose exhibition wax is always near perfection, is that copper is the ideal metal for wax handling equipment. I find no mention of copper in U. S. D. A. Circular E 495 by Vansell and Bisson. Copper is of much more interest to beekeepers than glass or platinum, and price, availability, and ease of fabrication make it preferable to nickle, stainless steels, or luminumm, the metals recommended by these authors.—Howard Potter, Jr., Michigan.

Answer.—Copper will seldom injure capping wax if the heat is not too great or continued too long. Cerotic acid of beeswax under some conditions will act on the copper and give the wax a greenish cast, because almost all salts of copper are green. This difficulty is no doubt worse in case old combs are being rendered.

Transferring into Modern Hives

Question.—Last year I put a swarm of bees in a lawn-mower box. Later I put a hive under it, forcing the bees to go through the hive to get out. The bees failed to move into the hive with frames with foundation. How could I make the bees move down into the hive so I could remove the box?—J. Mark Funderburg, Mich.

Answer.—A simple and efficient method, which has been used by old-timers and present day beekeepers alike, is as follows: Turn the box hive upside down, remove all, or nearly all of the bottom, and place over it a standard hive body filled with drawn combs or frames with full sheets of foundation, and a cover. Close all the openings between the old and the new hive, leaving only an entrance in front, between the two hive bodies. This will cause the bees to go in and out above the old crooked combs and below the new ones. By turning the old hive over we also turn the crooked combs upside down. This puts the cells in an unnatural position and makes them somewhat less suitable for brood-rearing and the storage of honey. With the old combs in this position, the bees will be less reluctant to leave the old brood nest. A comb of sealed brood placed in the new hive will be an extra inducement for them to start work in the upper story more quickly. When the queen has a brood nest established in the new hive place a queen excluder over the old combs to prevent her going back, keeping the entrance above the excluder. Be sure to put on supers in time to prevent the new combs becoming crowded. Before the season is over the colony will have moved, bag and baggage, up into the new quarters, and the box of old combs can be taken away and the wax melted. Mr. George H. Rea, the New York Extension Apiarist, says he has transferred hundreds of colonies in this manner. Transferring is best done early in the season, during the fruit bloom or some other early honey flow, so the steady supply of fresh nectar will stimulate the bees to expand and build new comb. Late transferring should be avoided. If the box hive colony isn't in condition to live until another spring, it certainly is not likely to become well enough established on new combs to winter successfully.

Heating Honey to Destroy Yeasts and to Retard Granulation.

Question.—Do you recommend heating honey before marketing it? It has been suggested that honey be heated to 160 degrees to destroy yeast cells and to retard granulation, but I understand that heating often darkens honey and impairs the flavor. Is this true or is heat really advantageous? —Henry M. Rowan, Mass.

Answer.—It is a fact that heating honey to 160 degrees Fahrenheit will destroy yeasts and will retard granulation. It is important, however, to keep the honey at this temperature for only ten or fifteen minutes, after which it should be cooled. To prolong the temperature of 160 degrees Fahrenheit would darken the honey. It will become somewhat darker, as it ages, regardless of whether or not heat has been applied. Honey that is being processed in quantity is usually cooled in large tanks that are equipped with water jackets into which cold water is run. These tanks are also equipped with agitators that circulate within the tank to keep the honey mixed while it is being cooled.

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Removed Food Chambers With Soured Honey

Question.—Last year I took off the food chambers and stored them in the basement. The honey drew moisture and soured. This was good well-ripened honey. I was afraid to put it back on the bees as I thought it would give them dysentery. Could I put them back on this spring and would the bees work it over or should I let them rob it out? There are 17 full-depth supers of it.—R. B. Hoover, Indiana.

Answer.—The 17 deep supers of honey stored away in your basement are suitable for bee food, even though some of the honey may be slightly sour. Such honey that has begun to ferment would not be suitable for winter stores, that is, it would be inadvisable to put such honey on hives late in the fall, as it would likely cause dysentery during the winter months, when bees would be unable to fly frequently. This honey, if put on hives of bees in the spring, after warm weather comes, will be worked over by the bees. As a matter of fact, in a comparatively short time, all signs of fermentation will have disappeared. We would suppose that these 17 supers filled with honey would be a boon to your apiary this spring. As you know, colonies with an abundance of stores are likely to build up rapidly. The bees will use this honey for brood-rearing. In the majority of cases, bees over the country do not have a sufficient amount of honey for producing very populous colonies. It is a populous colony that puts up big crops of honey, as you doubtless know. Bees in your locality may get some honey from fruit bloom and dandelion. However, there is usually a dearth of nectar between dandelions and the clover flow. Quite often strong colonies of bees with insufficient stores, may die during this dearth of nectar, especially if there should be a long cool rainy period. The importance of an abundance of stores during the winter and spring months cannot be over-emphasiztd. It is advisable to leave the food chamber on the hive during the entire year, with the possible exception of producing section comb when the food chamber is removed temporarily and put on another hive during the main flow.

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Demareeing Colonies

Question.—On page 90, February issue of Gleanings, an article by E. S. Miller, of Valparaiso, Indiana, mentions a system of Demareeing. I have looked up in the ABC and XYZ all the information available but no clear system is described for the double-brood chamber hive. Would you be so kind as to furnish me with such a description? I changed over to double-brood chamber hives a year ago.—Henry Lyman, Conn.

Answer.—G. W. Demaree, of Kentucky, originated this method of swarm control in 1892, which involves raising combs of brood above the queen excluder. In our apiaries, where most of the colonies occupy deep food-chamber hives, we place the queen excluder over the double-brood chamber and keep it there during the entire season. Occasionally at the beginning of the major honey flow, a few colonies may start to build cells. If such colonies are bent on swarming we simply raise all but one frame of brood out of the double brood chamber hive into the supers above. We make sure to leave the queen down below the excluder. We substitute either full sheets of foundation or drawn combs for the combs of brood taken out of the double brood chamber. This procedure usually solves the swarming problem, because the queen is separated from most of the brood and thus congestion in the brood chamber is relieved.

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Number of Supers to Put on

Question.—How many extracting supers do you advise putting on at a time at the beginning of the season?—Ruth E. Williams, Penn.

Answer.—During the early spring flow, one super of drawn combs for each colony should be sufficient. When the clover flow starts it does no harm to put on two supers at once in order to give ample comb space.

Just News

The Middlesex County Beekeepers' Association will gather on Saturday, July 18, at 2 P. M., in Mrs. Hollis Webster's mellifluous herb garden at 1960 Massachusetts Avenue, just west of the Green in Lexington, Mass. Each family will bring its own basket picnic supper. Colonies will be opened and queens painted. Vice-president Paul Tolstrup will set up an educational exhibit of a beekeeper's equipment and explain its use in a talk for beginners. Mrs. Webster, who is an authority, lecturer, and author of a recent good book on herbs, is also an intrepid beekeeper. She will exhibit one of the original Langstroth hives in perfect condition.—A. M. Southwick, Pres.

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A joint meeting of the North Dakota and the Minnesota Beekeepers' Associations is to held at the Pavilion at Detroit Lakes, Minnesota, Saturday, July 25. The program will start at 10:00 a.m. The list of speakers will include Dr. Frank Eversull, President, N.D. Agricultural College, Fargo, North Dakota, and Mr. E. R. Root, Medina, Ohio. — M. C. Tanquary, Secretary.

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The summer meeting of the Iowa Beekeepers' Association will be held this year on July 15, at Harlan, Iowa, with Mr. L. D. Taylor as host for the day. Mr. M. J. Deyell, Editor of Gleanings, will be with us for the day and will be the principle speaker on the program which will start immediately after lunch. Mr. Taylor has a modern and up-to-date plant for handling honey and some time will be devoted to his operations, so come as early as possible and get at least part of the picture before the lunch hour. Come, meet Mr. Deyell, learn about Mr. Taylor's equipment and operations, and have a good visit with all of your beekeeper friends. —Glenn O. Jones, Vice-Pres.

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There will be a series of beekeepers' field meets beginning at Menominee Falls, Wis., July 21; Viroqua, Wis., July 22; Ladysmith, Wis., July 23rd; Detroit Lakes, Minn., July 25, this last comprising North Dakota and Minnesota Beekeepers' Associations. E. R. Root expects to attend all these meetings.

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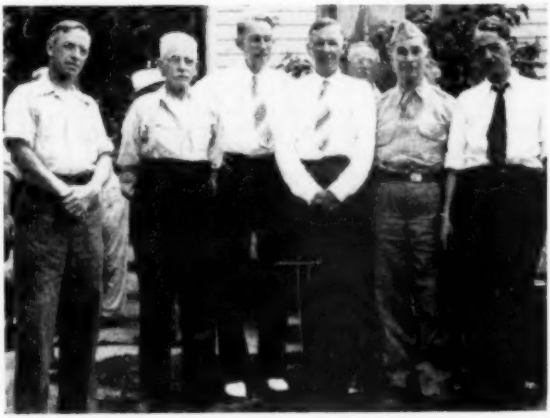
The Ohio beekeepers' annual summer round-up of the Cuyahoga County Beekeepers' Association of Ohio, will be held on Sunday, July 26, at the farm and apiary of the County Bee Inspector, George Seidel, Depot Road, Strongsville, Ohio. As in the past, this will be an all-day program with talks by well-known leaders in the beekeeping industry,—and again George suggests bringing the family and a picnic lunch. In the event of rain the entire program will take place at the Strongsville Town Hall. A cordial invitation is extended to everyone interested to come and spend an enjoyable day with us.—Ed. Johnson, Sec.



Here are a few people who attended the meeting of the Cuyahoga County Association last year: Left to right, Irvin Vandevier, Bee Inspector, Mel Pritchard, Queen Breeder, Chas. Reese, State Apiarist, Jack Deyell, Editor of Gleanings, Bro. York, Beekeeper, and Jere Frazier, Manager, G. B. Lewis Co. branch in Springfield, Ohio.

Honey an Important Industry in Manitoba

(From Manitoba Industrial Topics for October, 1941)

Besides being a new industry in Winnipeg, the Manitoba Co-operative Honey Producers Ltd. claims the distinction of being the first of its kind in Western Canada, and the second such plant in the whole of Canada. Its doors were first opened in July, 1939. Its success since then has proven without question the many advantages of a centralized packing plant, both from the viewpoint of the beekeeper and consumer.

The growth of beekeeping in Manitoba has been little short of phenomenal. The first recorded production was in 1880 with 1,080 pounds. By 1921 the total had grown to 400,000 pounds. But this was still far from sufficient to meet the local demand and it was necessary to import many thousand pounds from Ontario.

By 1926, Manitoba's production had grown to 2,000,000 pounds, and during the last few years the total annual crop has been between 6,000,000 and 7,000,000 pounds, with a value to the producer of from $500,000 to $750,000. Thus it can be safely claimed that the honey industry is a major contributor to farm income. Manitoba now supplies all her own local needs and makes large shipments to all parts of Western Canada and to the United Kingdom.

Most people are rather surprised that honey requires pasteurizing, or processing, as it is sometimes called. The reason is that all honey contains yeast spores, which will cause it to ferment if it is held in storage for a sufficiently long time, unless the honey is of very low moisture content. In the Co-operative plant the honey is carefully raised in temperature until these yeast spores are destroyed, when it is rapidly cooled and packed. The packed honey is stored for one week under controlled temperature and humidity to complete the granulation.

Exhaustive government experiments have proven that pasteurizing does not in any way affect the flavor or food value of honey, and it can be indefinitely stored. Another feature of processing honey is that the granulation is carefully controlled, and a fine smooth texture is always obtained. As most honey is now eaten in the granulated form, this feature is very popular.

The Manitoba Co-operative Honey Producers Ltd. is owned by some 600 provincial beekeepers and the plant is operated on co-operative principles. After extracting the honey, the beekeeper delivers it to the plant, where he receives an initial payment. Subsequent checks are mailed during the year, in keeping with the return received from the sale of honey. In this manner the organization is operated on a non-profit basis, with all benefits being returned to producers.

During its first two years the organization returned substantially more to its members than other beekeepers received by selling honey on the open market. This was possible because all consumers were willing to pay a small premium in order to receive a brand of honey they knew was properly packed under sanitary conditions and protected against fermentation.

Although honey is mentioned many times in the books of ancient history, its many outstanding qualities are not yet generally known to the public at large. It is the most easily digested sweet product and far exceeds any other food for energy building qualities. Although its consumption has been growing steadily, there are still many more million pounds available in the clover fields and flower gardens of Manitoba.

Manitoba honey has consistently taken the leading prizes at different exhibitions throughout Canada and the United States. Everyone in this province can well be proud of the record.

[The province of Manitoba is indeed favorable for honey production. From the monthly Bulletin of Agricultural Statistics, Ottawa, for March 1939, we find (page 124)) that the average production of honey per hive or colony in Manitoba during ten years, 1929 to 1938 inclusive, was 131 pounds. This is exceeded only by one other province, Alberta, that averaged 148 pounds per hive during the same period. The Dominion of Canada during the year 1880 (see May Gleanings for 1884, page 311) was credited with producing 1,875,745 pounds of honey. A ten-year average, 1929 to 1938, was something over 26,000,000 pounds.—Editor.]

Talks to Beekeepers

M. J. Deyell

Mountains And Valleys

Keeping bees might be likened to a journey through a mountainous country. One day we are up on the mountain top, the next day in the valley. When our beekeeping program goes well our spirits are up, but when we experience difficulties, as we do frequently, our spirits may drop to the depths.

During this present season conditions have been variable. It is remarkable how quickly they can change. During a dearth of nectar, or during a cool rainy spell just preceding the major flow, when stores in the hives may be reaching the vanishing point we may wonder (in our weaker moments), why we ever took up beekeeping. When the sun shines once more and nectar begins to roll in, we wouldn't change our vocation for any other business.

Differences in Locations

Commercial beekeepers with apiaries spread out over any given area, to take advantage of nectar and pollen plants, have doubtless noticed, as I have, a difference in localities in regard to availability of early sources of nectar. I have in mind two apiaries near Medina, about 7 miles apart. The bees in one apiary invariably eat up practically all stores by the time the major flow begins, while the bees in the other apiary store a little surplus from early sources—dandelions, etc.

In choosing a desirable location for an apiary it seems essential to consider one with dependable sources of early pollen and nectar which not only help to furnish ample food for bees but also stimulate maximum brood-rearing which results in populous colonies for the main honey flow.

Differences in Seasons

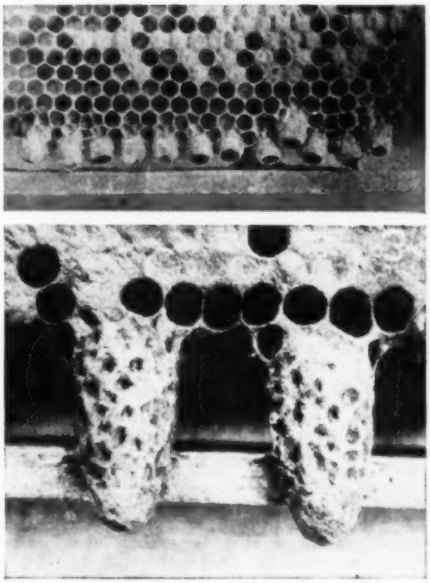
One would hardly suppose there could be such a variation in seasons regarding the time that the main honey flow begins. Normally it starts in this area about June 10. In 1921 it started May 22, and in 1940 the main crop was stored after July 1.

We are told that it is necessary to plan ahead in order to have all colonies reach their peak of strength at the time the major honey flow begins. This sounds sensible, but, as a matter of fact, it is easier said than done, especially with variations of seasons.

Today, June 13, some nectar is coming in, in this locality, but up to the present nothing very exciting has happened. It is possible that the recent rains may bring on white Dutch clover in the pastures and that it may yield nectar a little later on. The yellow sweet clover, where it is found, is already yielding some nectar, but somehow weather conditions have not yet been favorable for rapid nectar secretion. We hope something may happen soon.

A Word About When To Put On Supers

Those keeping bees in or near towns or dwelling houses should use good judgment in putting on supers, especially when supers contain drawn combs that are wet. Such combs, if given to colonies during the day when very little nectar is coming in, will excite the bees. They will rush out of the hives in search of honey and may perhaps cause some trouble in the neighborhood. Some beekeepers place wet extracted combs over colonies in the fall to be cleaned out. Others store combs away, wet, after coming from the extractor. If and when wet combs are put on, prior to the main flow, excitement among the bees may be avoided by placing the supers on the hives late in the evening after the bees have stopped flying. The combs will then be cleaned up during the night and no trouble will occur. For a number of years I have followed



Upper—Swarming cells started on bottom of comb just above bottom bar.

Below—Two beauty capped queen cells, with queens almost ready to emerge.

this practice on a small apiary located near a dwelling house. If I became careless about manipulating these hives I'm quite sure the owner of the location would have asked me to move the bees before this. And, of course, one should examine bees only during the middle of the day when they are working as they will then be more easily handled.

Colony Manipulation

Quite a number of beekeepers have colonies in double-story brood chambers. Let us assume that one or two or possibly more, supers are already on the two-story brood chamber and that a queen excluder is under the supers. When it is necessary to examine the double brood chamber the outer cover should be removed, then inverted or turned upside down on the ground. The supers are piled on the inverted cover so that bees on the bottom of the super may not be killed as there is more than a bee space between the bottom bars and the inside of the inner cover.

Here is a little kink in handling the upper chamber. After it has been examined be sure the queen excluder is placed on top of the pile of supers and underneath the upper chamber, temporarily, to prevent the possibility of the queen leaving the brood chamber and going down into the supers while the bottom chamber is being examined.

Lighting a Bee Smoker

At present we are using ragged burlap sacks rolled up and cut to proper length, for smoker fuel. A small amount of paper placed in the bottom of smoker and lighted will help to get the burlap started to burn.

The Mystery of Pollen

The other day while traveling from one apiary to another in western Ohio we ran into a heavy rainstorm which appeared to be quite general in that area. It was necessary to postpone the examination of bees for a time until the sun began to shine again. Directly after the shower we stood beside some hives to observe the entrances. At first there were only a few bees leaving and entering the hives. After a few minutes we noted some bees loaded with pollen entering a few hives. Just how or where those bees could collect pollen, directly following a heavy rain was beyond us. Is it possible that those bees got caught outside of the hive during the shower? Possibly others have made similar observations.

Taking Off Honey

There may be a tendency this season to remove combs of honey before they are capped over and before the honey is properly ripened. This is a mistake. Such honey is likely to ferment because it has too high a percentage of moisture. Combs should not be extracted until they are practically all capped. If wet weather prevails it is more difficult for bees to ripen honey than during dry weather and therefore honey should be left on the hives longer.

The backlot beekeeper does not need large honey extracting outfit. In fact, it is possible to handle honey from fifty to one hundred hives with a two or three frame honey extractor. Be sure the machine is anchored properly. Where electricity is available a small 1/6 horsepower motor can be used to advantage. Be sure to do the extracting in a basement or building that is bee proof. Get honey extracted during hot weather, if possible, as honey comes out of combs readily when the temperature is high.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 8 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 10th of month preceding.

HONEY FOR SALE

NEW CLOVER COMB—Now ready. Clarence Engle, Kearneysville, W. Va.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorehead, Minn.

NEW comb and extracted ready about the last of July. H. G. Quirin, Bellevue, Ohio.

WILL HAVE more Tupelo honey May 20th. Marks Tupelo Honey Co., Appalachicola, Fla.

NO. 1 CLOVER comb honey, $3 case; amber or buckwheat, $2.75; new crop July, higher. C. B. Howard, Geneva, N. Y.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

HONEY FOR SALE—We buy and sell all kinds, any quantity. H. &. S. Honey & Wax Company, Inc., 265-267 Greenwich Street, New York.

NEW CROP—white clover honey ready to ship July 15th. Comb, No. 1 to Fancy, $4.00 per case. Extracted in 60's, 12c. F. J. Smith, Castalia, Ohio.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

E. D. TOWNSEND & SONS, Northstar, Michigan, now offering our 1942 crop of Michigan clover honey. New 60c cans. Say how much you will need, and we will consider your quota, and quote you our price.

FOR SALE

QUEENBEE PAINTING outfits $1.00 postpaid. Southwick Apiaries. Waban, Massachusetts.

400 USED 60-lb. cans, good condition with or without cases. Make an offer. Bizzy Bee Ranch, No. Abington, Mass.

FOR SALE—1 Root 8-frame Buckeye Extractor in good condition, $60 crated, here. B. B. Coggshall & Son, Groton, N. Y.

FOR SALE—200 comb honey supers ready to set on hives, one dollar each, cannot be shipped. N. B. Querin, Bellevue, O.

COMB FOUNDATION at money-saving prices. Plain, wired and thin sections. Wax worked at lowest rates. Comb and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

WAX WORKED into quality medium brood foundation for 16c per pound; 100 pounds, $12. Fred Peterson, Alden, Iowa.

FOR SALE—400 good used wood cases for 2/60 lb. cans. Also 1000 used 60 lb. cans. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

THE ONLY complete line of wax rendering equipment ever offered—the "Perfection" Line. A size and type suitable for every commercial beekeeper. Write for descriptive circular. Robinson's Wax Works, Mayville, N. Y.

SAVE MONEY by letting us work your wax into wired or regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices, as we have no agents. Walter Kelley Co., Paducah, Kentucky.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

CASH PAID for carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

WANTED—White and amber honey; any amounts. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

CASH FOR EXTRACTED clover and orange honey. Send sample and best price. Bizzy Bee Ranch, No. Abington, Mass.

WANTED—Honey and beeswax. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

WANTED—White clover honey. Extracted, comb, and chunk comb, any amount. Lose Bros., 206 E. Jefferson, Louisville, Ky.

CASH PAID for extracted clover honey. Send sample and best price. Clover Bloom Honey Co., Gen. Delivery, Shrewsbury, Mass.

WANTED—Clover extracted honey. Quote price and state grade and whether new or used containers. Ellsworth Meineke, Arlington Heights, Ill.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter Kelley Co., Paducah, Kentucky.

HONEY. WE PAY HIGHEST PRICES. Strained comb or beeswax. Write for quotations. Seifert & Mann. Since 1887. So. Water Market, Chicago.

CASH PAID for extracted white clover or light amber. Send sample and best price to Honeymoon Products Co., 39 E. Henry St., River Rouge, Michigan.

WANTED—White clover and light amber honey. Any amount. Cash at time of delivery. Clover Blossom Honey Co., 712 Kossuth St., Columbus, Ohio.

WANTED—Extracted honey in ton lots or more. Send sample and quote price delivered here. C. J. Morrison, 1235 Lincoln Way West, South Bend, Ind.

HONEY WANTED—Truck or carload lots delivered to Sioux City, Iowa. Write us at Wendell and submit sample. R. D. BRADSHAW & SONS, Wendell, Idaho.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

WANTED—We pay cash top price for clover honey in 60-lb. tins. Any quantity. Send samples and best price. Cloverdale Apiaries. F. M. Babcock, Fredonia, N. Y.

BEES AND QUEENS FOR SALE

Young laying leather colored Italian queens. 50c each. Jasper Knight, Hayneville, Ala.

BRIGHT ITALIAN AMERICAN QUEENS, 50c each, any number. D. W. Howell, Shellman, Georgia.

NORTHERN-BRED queens. Hardy honey getting Italians, 50 cents each. Shirl Baker, Rodney, Michigan.

CAUCASIANS "Queens", 60 cents each; 25 or more, 50c each. Lewis & Tillery Bee Co., Greenville, Ala.

FOR SALE—Select colonies bees, hives, supers, foundation. Guaranteed no disease. Ralph Hibbard, Calcium, N. Y.

CHOICE bright Italian queens, northern bred for gentleness and hustlers. 75c each; dozen, $8.00. Emil W. Gutekunst, Colden, N. Y.

BETTER TRY Green's queens. They are the best, say many customers. Price, 40c each, any number. D. P. Green, Rt. 2, Deland, Fla.

FOR SALE—Bright yellow and three-banded queens. Guaranteed satisfaction. Write for prices. Graydon Bros., Rt. 2. Greenville, Ala.

FOR SALE—500 colonies or less, with supers, winter cases and locations. Guaranteed disease free. Fred D. Lamkin, Union Springs, New York.

CAUCASIAN BREEDERS ONLY. Laying queens, 75c; tested, $2.00; 2-lb. pkg. and queen, $2.30; 3 lbs., $3.00. MILLER BROS., Rt. 1. Three Rivers, Tex.

GOLDEN QUEENS — Excellent quality. Gentle, productive, health certificate. Satisfaction guaranteed. 50c. O. E. Brown, Route 1, Asheboro, North Carolina.

GOLDEN Italian queens, good workers and gentle to work with; untested, 50c each, and tested, $1.00. Satisfaction guaranteed. Carolina Bee Company, W. O. Curtis, Mgr., Graham, No. Car.

LEATHER-COLORED Italian queens, 50c each. We cooperate with good honey producers in selection of breeding queens and believe our stock to be as good as you can buy. Diemer Bee Co., Liberty, Mo.

Honey Wanted

All grades white and amber honey.

Cash paid for cars and less than cars.

Send samples and best prices.

C. W. Aeppler Company
Oconomowoc, Wisconsin

WANTED—White and amber extracted honey. Fancy comb, also No. 1 comb honey. Comb honey in shallow extracting frames. Beeswax. We render old comb into wax. Prompt remittance. Write us.
THE FRED W. MUTH CO. • CINCINNATI, O.

WANTED--Extracted Honey All Varieties
Send samples and delivered prices to
JEWETT & SHERMAN COMPANY
Cleveland, Kansas City and Brooklyn

Moore's Strain

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view.

By careful selection during all these years I have succeeded in producing a strain of three-banded, leather-colored Italian bees, known as MOORE'S STRAIN OF ITALIANS, which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Send for descriptive circular and read reports from those who have tried them.

Untested queens, 50 cents each.

J. P. MOORE, R. 3
Falmouth, Ky.
Former address, Morgan, Ky.
Safe arrival and satisfaction guaranteed.

SHAW'S

Three-Banded Italian Queens

For 19 years, this famous strain of Italians has pleased the most exacting honey producer and has made me friends wherever purchased. Try them and make this a profitable season. In addition to the above strain I will be able to supply you with queens from stock bred for resistance to disease.

Colonies averaged 200 lbs. here in Mississippi the past season. And this is no honey state. Prices either strain:

Lots of 1-24 ..... 60c
Lots of 25-99 ..... 55c
Lots of 100-499 ..... 50c

Tested queens, double the price of untested. All queens clipped free upon request.

A. E. SHAW, Shannon, Miss.

MERRILL'S

Quality Bees and Queens

Prices on Packages with Queens

2-lb. pkgs. with queen.. $1.75 each
3-lb. pkgs. with queen.. 2.25 each
4-lb. pkgs. with queen.. 2.75 each
Queens ..... .50 each

If queenless packages are desired, deduct price of queen. If larger packages or larger number is desired, write us.

• • •

Merrill Bee Co.

Bucatunna, Miss.

Mississippi's Oldest Shippers

EXTRA YELLOW Italian queens that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested, 50's each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Rt. 2.

EARLY PACKAGE BEES—Prompt shipment begins May 1. Two-pound package bees with queen, $2.45; 3 lbs., $3.15. Add 25c postage for each package. Choice Italian queen, 75c. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa.

CAUCASIAN package bees and queens, high quality, long-tongued, gentle, prolific. June prices; 2-pound package with queen, $2.25; 3-pound package with queen, $2.75; queens, 60c each. Safe arrival and satisfaction guaranteed. Skinner Bee Co., Greenville, Ala., Route 1.

PACKAGES AND QUEENS—Our Hustler strain, 3-band Italians, get the honey. 2-lb. package with queen, $2.50; 3-lb. package, $3.20. You will be pleased with the Weight, Quality, and Service that we give you. Caney Valley Apiaries, Yancey Bros., Owners. Bay City, Texas.

60 COLONIES (Italians) in double brood chamber, new hives with cut comb honey on hives. $12.50 each for the lot. Guaranteed no disease. 3 supers per hive with crop. Reason for selling—being transferred 1500 miles. First truck and the cash takes all. Presley Pound, Macon, Mo.

FOR SALE—Northern-bred Italian queens Good honey getters, winter well, handle easily, not much inclined to swarm. Safe arrival guaranteed, 45 years breeding experience. Queens by return mail. Prices balance of season: 1, 75c; 3 for $2.00. Write for quantities. I. F. Miller. 183 Valley, Brookville, Pa.

THREE-BANDED Italian bees and queens of extra fine quality; also extra fine honey-gatherers. 2-lb. package with queen, $2.00 each; 3-lb package with queen, $2.50 each. Untested queens, 50c each, any number. A health certificate with every shipment. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, No. Car.

HELP WANTED

MAN TO HELP harvest extracted honey, 1,000 colonies. Now until December 1st. Year around work for right man. Ernest Sires, Stanfield, Oregon.

WANTED TO BUY

WANTED—O. A. C. honey strainer. D. G. Greenler, 1315 Starr, Toledo, Ohio.

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A BEE JOURNAL edited and published for Western Beekeepers. One dollar per year. Clubbed with Gleanings for $1.75 per year. Western Honey Bee, 3905 Lemon Street, Riverside, California.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba, Beekeepers' Association, one year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $1.60. Wallingford Building. Winnipeg, Canada.

MANY Beekeepers have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto, 2, Ontario.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

St. Romain's "Honey Girl" Italians

Hardy—good honey producers—gentle
2 Lbs. Bees With Young Queen . . . $2.50
Untested (young) Queen, 1 to 3, 75c ea.
4 to 9, 65c ea; 10 or more, 60c ea.
A. D. ST. ROMAINS APIARIES
Moreauville, La.

Announcing

the purchase of the Alabama Apiaries of David Running. We have now arranged to supply a limited number of queens from this stock from our Georgia headquarters.

If interested in securing these queens, write at once so that we can arrange to supply you.

Queens small lots, 60c each

Either Running stock or imported strain. Quantity prices on request.

Rossman & Long

Box 133 **Moultrie, Ga.**

CARNIOLAN QUEENS : MY CARNIOLANS WILL NOT PROPOLIZE COMBS
Queens, 65c each postpaid; over ten, 60c. Airmail 5c per queen extra.
EPHARDT'S HONEY FARMS - - - PLAUCHEVILLE, LA.

Better-bred Queens 50c each Three-banded Italians

Head all of your colonies with our Better-Bred Stock. They have proven their good qualities throughout the U. S. A. and Canada. Use them for increase, requeening and swarm control.

CALVERT APIARIES — Calvert, Alabama

NORMAN BROS. PACKAGE BEES and QUEENS

BRIGHT 3-BANDED ITALIAN QUEENS 50c each **BY RETURN MAIL**

At this low price now is the time for you to start with NORMAN BROS. young, vigorous, healthy package bees and queens. You will have less winter loss, better colonies next spring. Our twenty years of experience assures you of the best stock money can buy. Safe arrival and satisfaction guaranteed in every respect.

2-lb. pkg. with queen—$2.00 each
3-lb. pkg. with queen— 2.50 each

Package bees f.o.b. express; if wanted by parcel post, add postage.

Norman Bros. Apiaries : : Ramer, Ala.

Facts We Should KNOW

(1) The AMERICAN HONEY INSTITUTE is a business primarily to develop more consumer interest in honey .

(2) During the first four months of 1942 the INSTITUTE furnished honey information to over 1000 organizations in 48 states, four provinces of Canada, also England and Cuba, (not to mention thousands of individuals).

(3) The following are just a few who asked for and received information:

Newspapers	Dairies
Magazines	Meat Packers
Broadcasting Stations	Wholesale Grocers
Universities & Colleges	High Schools
Home Demonstration Agts.	School Lunch Kitchens
Red Cross	Pullman Co.
Nutrition & Canteen Work	Civilian Defence Council
Candy Companies	Home Maker Clubs
Agr'l Marketing Service	Farm Bureaus
Bakers	Y. W. C. A.
Canners	Cafeterias
Brewing Companies	Hospitals

(Help yourself by helping the **Institute**)

• • •

Mail Contributions to

American Honey Institute
Madison, Wisconsin

FILTERING HONEY

(Continued from page 405)

tention should be paid that the honey does not go above 160° F. as a final temperature reading. Starting with cold water is the safest procedure, then gradually build up to the desired temperature. If at this point all the honey is not melted, pour off all that is melted and set the cans back for a few minutes to finish melting.

In either the hot room or oven, the temperature should be controlled so that it can not go higher than a certain point. The cans of honey should be placed in the evening and usually are liquefied by the next morning.

The chest or cabinet of steam pipes is so constructed that the honey gets away as fast as it is liquefied. This system is without a doubt the fastest and safest of all. The liquefied honey does not have a chance to become too hot since it is not confined. The cans are placed in the cabinet on their sides with the opening to the low side and over a trough into which the liquid honey can flow. The bottom should be slightly lower than the top so as to prevent the mass of granulated honey clogging the opening. This liquefier has been previously described, so I will not do so.

In concluding the subject, I am aware that it is much more handy for one to leave the honey in a water bath until it is hot enough to bottle than to have to heat the honey after it has been liquefied.

Filtered honey is here to stay. The consumer has decreed as much. It is he who waves the stop and go sign all of the arguments to the contrary notwithstanding.

• • •

BEEKEEPERS, SAVE THE SCRAPS

The scrap rubber drive all over the United States is proving as no similar drive has ever proved, what a vast total can be amassed by saving small amounts. True, the rubber urge is patriotic and at the same time selfish — we must provide our military equipment with rubber if we are to win the war, and we must save scraps to help make it possible to secure more recaps for civilian use later on.

The beeswax situation is very similar. The Army and Navy are needing more and more beeswax. In fact, beeswax is rapidly becoming a critical war product. Then our own industry, in order to make possible the production of more beeswax, needs a certain amount for comb foundation. Comparatively speaking, this need is small, but important.

There is this vast difference between collecting rubber scrap and beeswax scrap. Instead of one cent a pound which we are paid for rubber, we can get market price, or nearly forty times as much as for rubber.

Producers are already planning to use only eight frames in a ten-frame super, and by uncapping deep, to increase the normal production of about 1½ pounds of beeswax from cappings for every 100 pounds of honey to two pounds or more.

Producers are also going to take advantage of the great need to make a closer than usual scrutiny of extracting combs, saving out for melting into beeswax, all crooked, wavy, or broken combs, also those containing a lot of drone cells. It is penny-wise and pound-foolish to continue such combs in use. Melt them up for the Army and Navy!

Last of all, but by no means least: Carry around a receptacle of some kind, even if nothing more than a paper bag, and save scrapings of burr comb. These also yield the whitest beeswax and that having the highest melting point. It is astonishing how fast such scraps accumulate, and they need very little preparation beyond melting to yield beeswax comparing favorably with capping beeswax.

Beekeepers, by saving wax, have a real opportunity to help win the war and to help themselves at the same time. The production of honey need not be diminished.

QUEENS of Quality 40c each

By Return Mail

Bright 3-Band Italian Bees and Queens of Highest Quality. Purely mated. Safe arrival and satisfaction guaranteed. Packages express collect. Health certificate furnished with each shipment.

Mail your orders TODAY and be among our MANY SATISFIED customers.

Untested queens	$0.40
Tested queens	.80
2-lb. package with queen	1.60
3-lb. package with queen	2.40

JOHN A. NORMAN

Ramer, Alabama Route 2

YORK'S PACKAGE BEES and QUEENS

QUALITY BRED ITALIANS

A Great Season, Largest Demand Ever. Thanks To All!

With all fairness we wish to state we sold no bees or queens for less than our regular list price and all were supplied from our own apiaries only. We strived to give you the very best quality possible and comments are bearing this out. Will continue to supply bees and queens for remainder of season. Rush your order for prompt service. Prices as follows:

Young laying queens ..... **$ .75 each**
2-lb pkgs. bees with queens ..... **2.50 each**
3-lb. pkgs. bees with queens ..... **3.20 each**

Queens by airmail, add 5c per queen. Queens clipped, 10c each extra.

YORK BEE CO., :: Jesup, Georgia, U. S. A.

The Universal Apiaries

We Ship No Bees or Queens After June 1st

for the remainder of the season. That we may have better post office service we are changing our address from Brooklyn, to Castleberry, Ala.

Caucasian Apiaries

Castleberry, Ala.

Home of genuine Mountain Gray Caucasian Bees

Mountain Gray Queens

June until November

No package bee orders accepted but we are operating three large queen yards and will appreciate it if you will send us your orders for queens ahead of shipping dates.

Good queens—good service!

Prices: 1 to 49, 60c each
50 to 99, 55c each

BOLLING BEE CO.
BOLLING, ALA.

QUEENS OF QUALITY

By return mail
40c each

When you pay for good queens be sure that you get them by ordering Norman's. We have been breeding the three-banded Italian bees for 22 years and we feel sure that you will be pleased with our queens. Our apiaries are inspected every year by the state inspector. No more packages this season but we will have the queens.

NORMAN BEE CO.
Ramer, Ala., Route 2

HOMAN'S

Vigorous 3-Banded Italian Bees and Queens

If you want good honey producers, try these for they are as good as you can buy. Full weight and satisfaction guaranteed. Prices:

2-lb. pkg., $1.80; 3-lb. pkg., $2.40.
Queens, each, 50c

Homan Bros.
Shannon, Miss.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the

"Australasian Beekeeper"

Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to The Editor, P. O. Box 20.
West Maitland New South Wales
Australia

ITALIAN QUEENS

Reared by Hollopeter, the finest we know how to produce, and enough for all. Choice untested queens, 75c each; 10, $7.00; 25 or more, 60c each. Tested, $1.50. Breeders, $5.00 to $10.00. Safe arrival and satisfaction guaranteed.

WHITE PINE BEE FARMS
ROCKTON, PA. LOCK BOX 80

APIARY HYGIENE

(Continued from page 408)

have access. Bees should never be fed out-of-doors. Robbing, whenever noticed, should be promptly dealt with.

(8) Keep all stocks strong. Use big hives, to make this possible. See that your bees never even approach starvation point. Give them, or leave them, more food than they are likely to need.

(9) Do not allow your bees to consume fermented honey or syrup. Such a diet brings about conditions that encourage the entry of disease.

(10) Keep combs of pollen in stock for use when natural supplies are scarce. Mouldy pollen, or a scarcity of this indispensable substance, may be responsible for certain types of bee disease.

(11) Remember that damp is a predisposing factor in disease. See that all hives are weather-proof, and whenever possible avoid selecting a too shady spot for the apiary. As Palladius said one thousand five hundred years ago: "The apiary should be near the house, in a sunny, secluded spot, not windy or too hot, and protected against robbers and animals."

(12) Try to discover who keeps bees in your neighbourhood. If he knows more than you do about the subject, ask for his advice and collaboration: if he knows less, tell him what you know. Endeavour to ascertain if his apiary is free from disease. If not, help him to control the outbreak, recollecting always that hands and clothes, if not disinfected, may carry contagion to your own apiary.

When I gave these notes to Irish beekeepers, I said that, if every one of our beekeepers could be induced to observe them, Eire would soon become a health resort for bee. Well, that goes for U. S. A. as well, and for every other country where bees are kept.

Dublin, Eire.

CAUCASIANS

Extra gentle, prolific, long tongue, little inclined to swarm, dependable workers,—10% to 40% ahead of Italians. Foundation stock from mountainous region of Terek, Caucasus.

CARNIOLANS

Prolific at all times, very gentle, best of workers. One record of 435 lbs. average over whole yard. Build beautifully white combs. My strain used in the recent Iowa Exp. Sta. test showing Carniolans best for western and northern conditions. Have supplied many Agricultural Colleges and Experimental Stations with them. Free Paper. Both races bred here in the North, hardier and thrifter.

Prices: Untested queens 1 to 5, 60c each 6 or more, 50c each. Tested $1.00 each. By Air Mail, 5c extra per queen.

ALBERT G. HANN
Glen Gardner, New Jersey

QUEENS

Italians - - - Caucasians

75 cents each

Weaver Apiaries

Navasota, Texas

Quality Italian Queens

at 45c each

Strain bred to resist A. F. B. The queens you should requeen with.

1 to 24 each **55c**
25 to 49 each **50c**
50 on up each **45c**

Please add 5 cents each for Air mail. No. C. O. D.

PLAUCHE BEE FARM
Hamburg, La.

Progeny-Test QUEENS Stock Bred for Resistance

Good stock with a scientific breeding background is what we offer. Get your colonies requeened for better results during 1942.

Prices: 1-25 . . . . 60c 20-100 . . . . 55c 100 or more 50c

BESSONET BEE CO., Donaldsonville, La. Add 10c per queen for stock bred for resistance.

Mack's Queens

(They Speak for Themselves)

Hardy Northern Bred Italians, guaranteed to equal any queens produced in America today. A breeder for over a quarter of a century. Until further notice price will be 60c each.

HERMAN McCONNELL

(The Bee and Honey Man)

Route 2 **Robinson, Illinois**

THRIFTY QUEENS

1 to 24, 60c each; 25 to 99, 55c each; 100 up, 50c each.

THRIFTY BEES are guaranteed to please. Fifty years' experience assures you of the finest stock and good service.

W. J. FOREHAND & SONS
Fort Deposit, Ala.
Breeders Since 1892.

PETTIT'S SUMMER QUEENS

will please you.
They please many others.
50c each, U. S. money, any number
Morley Pettit, Tifton, Georgia
In Canada, send 60c each to cover U. S. Exchange and Duty to
Morley Pettit, Georgetown, Ont.

Bright Three - banded Italian Queens. Begin now. Requeen with our improved stock, and you can divide your colonies next spring, and save on package buying.
1 to 50, 60c each; 50 up, 50c each.
Taylor Apiaries **Luverne, Ala.**

CANADIAN QUEENS

Our own choice Italian Queens, ready as early in June as weather will permit, 75c each. Tested, $1.25. Southern queens until our own are ready, at same price.

Package bees. Nuclei. Full colonies.

Quality Bee Supplies.

LORNE SHELLY, Troy, Ont., Canada

D. C. TART & CO.

Glenwood, Michigan

We have purchased the E. E. Mott Apiary, and are producing the same Mott Strain, Northern Bred, pure Italian Queens and package bees. Almost 100% non-swarming, gentle, hardy, hustling Queens and Bees. Winter splendidly. Booking orders now for June to October re-queening. Write for prices.

MARKETING HONEY COOPERATIVELY IN THE EMPIRE STATE

(Continued from page 399)

greatly facilitate immediate advances on honey before it has been sold. The procedure is something like this: a member ships or brings his honey to Groton where it is immediately graded and warehoused, a receipt from the warehouseman being immediately issued and a loan issued by the Springfield Bank on the warehouse receipt. The money thus obtained is used for advances to members on honey delivered to the Cooperative. The interest rate is 1½% and on a short period of time it means a real saving to members who would otherwise have to sell their crops at sacrifice prices to obtain ready cash. It also enables the Cooperative to sell the honey gradually throughout the year rather than in the early fall as would be necessary if members had to have money immediately once the crop was produced.

Each member is sent an identical marketing agreement and the member reports his crop and the amount the Cooperative is to market for him. To help build volume and thus keep costs of handling the honey low, most members cooperate fully by turning in their entire production. It is essential in building up an organization that members and management cooperate fully in this respect, and in accepting new members an effort is made to accept membership of only those who will work for the good of the rest of the members and the industry.

It is the policy of this organization to build markets for the future based on quality and service. By working with commercial users of honey who have utilized it previous to the war and who will continue to use it afterwards, markets will be established to dispose of the crops during the expected post-war "adjustment period," more generally known as a depression.

Membership is not restricted to New York State—any really cooperative minded producer may be accepted subject to the approval of the board of directors and purchase of ten shares of stock at the rate of at least two shares each year until the total is reached. Shares are $25 each and the amount may be deducted from proceeds of sales of the member's honey.

Prior to the recent sharp increase in prices, honey was at such a low level that many beekeepers were considering other means of obtaining a living. It is wishful thinking to presume that present high prices will continue following the war, and unless active steps are taken to insure a big demand for honey, prices may again fall to low levels. This is a golden opportunity to introduce honey to families not familiar with it and those unaccustomed to using it regularly. If this is done carefully with quality honey and good service they will eat it when peace comes and thus provide a good future market. We have found that consumers are establishing a decided preference for finely crystallized honey.

If cooperatives could be established in the major honey producing sections of the country, working for and under the supervision of beekeepers, better times would be in store for the beekeeping industry.

Another step in the right direction would be for the cooperatives from coast to coast to form a national cooperative council. Such an organization could meet once a year or oftener to discuss crop size and marketing methods, undertake united advertising, standardization of packs, and other problems of national importance.

Ithaca, N. Y.

(We understand that the Finger Lakes Cooperative is handling approximately 1,250,000 lbs. of 1941 honey. The outfit is growing rapidly and it is operated by and for beekeepers.—Editor)

L. L. LANGSTROTH

(Continued from page 414)

5/16", not more than ⅜", and seldom less than ¼".

Mr. Langstroth was among the first to grasp the idea of extracting honey by centrifugal force. Illustration showing his original machine with the proper gearing to revolve the reel is given on page 280 of our ABC & XYZ of Bee Culture. It thus appears that Mr. Langstroth made not only the first moveable frame,—the only one in fact that was really moveable, but also made the first geared extractor ever used.

Certainly all students of bee culture should read Miss Naile's book published by Cornell University Press, Ithaca, New York. It is not only interesting but will settle a good many controversial questions about the invention of the Langstroth hive and the introduction of Italian queen bees into this country.—E. R. Root.

Summer Prices

3-banded Italian

QUEENS

Any quantity 50c net

The PUETT COMPANY

HAHIRA, GA.

Queens ❖ Queens ❖ Queens

Garon's Progeny-Test Queens

Also DAUGHTERS OF STOCK BRED FOR RESISTANCE TO A. F. B.

Clipped or by Airmail at No Extra Cost.

Prices for both strains:

1 to 10, at 50c
11 to 25, at 45c
26 and over, 40c

Keep currently supplied with our quality queens. We produce them until late Fall.

GARON BEE COMPANY, **DONALDSONVILLE, LA.**

Telephone 3614 **Telegrams . . . . Western Union**

QUEENS

MILLER'S OLD RELIABLE 3-BANDED ITALIANS

An exceptionally vigorous, long-lived strain of bees. The best honey producers

1 to 24, 60c; 25 to 99, 55c; 100 or more, 50c each.

723 C. Street **JOHN G. MILLER** **Corpus Christi, Texas**

"YES" Queens Via Return Mail
No Delays

I ship when you want them. Price List

Select Untested Queens ..... **60 cents each**

24-99 Queens ..... **55 cents each**

100 or more Queens, 50c each. Select Tested Queens, $1.20 each

All Queens guaranteed purely mated and to give service.

W. E. HARRELL **Hayneville, Alabama**

A. F. B. QUEENS
of Resistant Stock Only

We are glad to have this strain to offer. It is U. S. Government Stock pure Italians, leather colored. We are certain this is the most prolific stock we have ever seen.

Both Queen and Drone mothers are tested before they are used in our breeding yards.

Queens ..... 60c; Lots of 100 or more 50c

R. L. BERNELL Rt. 4 Box 270 **New Orleans, La.**

BEEKEEPERS ITEM

Serving the beekeeping industry for a quarter century without bias or prejudice. "The forum for the thoughtful." One year $1.00; two years, $1.50; sample copy, 3c stamp.

With Gleanings it provides a combination that covers the beekeeping field.

Both magazines for one year, $1.75.

BEEKEEPERS ITEM

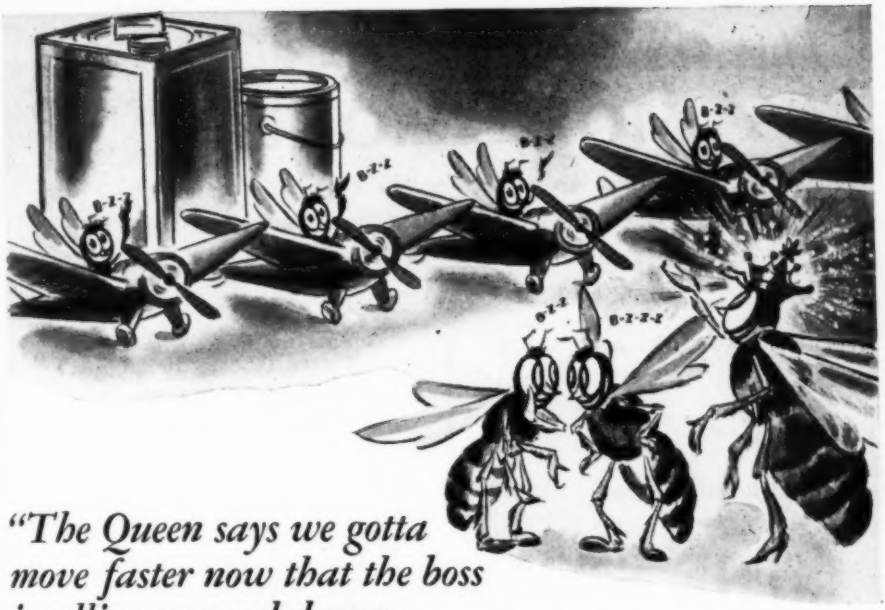
P. O. Box 687 **San Antonio, Tex.**

MUTH'S WAX RENDERING DEPARTMENT IS ALWAYS BUSY

Our steam wax presses do perfect work rendering all the wax from the comb and cappings . . . Thousands of beekeepers from all over the nation send their combs to MUTH for rendering . . .

THE FRED. W. MUTH CO.

Pearl and Walnut **Cincinnati, Ohio**



"The Queen says we gotta move faster now that the boss is selling so much honey in Continental Cans!"

EVEN the bees go for Continental's line of honey cans and pails!

Bright, tight, and clean, Continental cans and pails do a lot to help sell your honey. What's more, they're your assurance of complete protection.

Continental distributors always carry a complete stock of honey cans and pails ready for immediate shipment. They're conveniently located, so write, wire or phone the nearest for information on prices, sizes, terms, or samples. They're always glad to serve you promptly.

Complete information is also "yours for the asking" at any of our offices.

CALL THE NEAREST CONTINENTAL DISTRIBUTOR

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Miller Honey Co.

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A. I. Root Co.

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G. B. Lewis Co.

POWELL, WYO.
A. D. Hardy

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4622 WEST NORTH AVENUE, CHICAGO, ILL.

WHEELING · JERSEY CITY · LOS ANGELES · ST. LOUIS · CINCINNATI

The Answer is --

MORE HONEY

Let's Plan An Attack On The Sugar Shortage:

BY KEEPING MORE BEES—BY WORKING THEM BETTER

By Having Each Colony Headed by a Good Young Queen

PRICES ON MATED QUEENS

Italians or Caucasians	
1-24	60c each
25-99	55c each
100-499	50c each

Tested Queens twice the Price of Mated.

Payable in U. S. Funds.

All Queens Postpaid in U. S. or Canada by Regular or Air Mail Clipped at No Extra Cost

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MAYHEW, MISS.

INDEX TO DISPLAY ADVERTISEMENTS

Aeppler Co., C. W. 437
Alexander Co. 387
American Bee Journal 387
American Honey Institute 440
Australasian Beekeeper 442
Beekeepers' Item 446
Bernell, R. L. 346
Bessonet Bee Co. 443
Bolling Bee Co. 442
Calvert Apiaries 439
Caucasian Apiaries 442
Continental Can Co. 447
Dadant & Sons 392
Ephardt's Honey Farms 439
Forehand & Sons, W. J. 444
Garon Bee Co. 445
Hann, Albert G. 443
Harrell, W. E. 446
Homan Bros. 442
Hunt & Son, M. H. 390
Jewett & Sherman Co. 437
Kelley Co., The Walter T. 391
Lotz Co., August 387
McConnell, Herman 444
Merrill Bee Co. 438
Miller, John G. 446
Moore, J. P. 437
Muth Co., The Fred W. 387,437, 446
Norman Bee Co. 442
Norman Bros. Apiaries 439
Norman, John A. 441
Pettit, Morley 444
Plauche Bee Farm 443
Puett Co. 445
Root Co., The A. I. ..Inside back and front cover 386
Root Co. of Chicago, A. I. 386
Root Co. of Indianapolis, A. I. ..387
Root Co. of Iowa, The A. I. 386
Root Co. of New York, A. I. ...391
Root Co. of Syracuse, A. I. 386
Rossman & Long 439
St. Romain's Apiaries, A. D. 439
Schmidt & Sons, Oscar H. 390
Shaw, A. E. 438
Shelly, Lorne 444
Stover Apiaries 448
Tart & Son, D. C. 444
Taylor Apiaries 444
Weaver Apiaries 443
White Pine Bee Farms 442
Williamson & Walton 390
Woodman Co., A. G. 390
York Bee Co. 442